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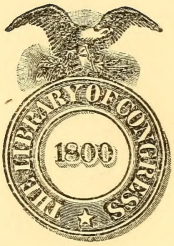
CARE AND TRAINING OF TROTTERS



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The Horseman and spirit of the times.

CARE AND TRAINING OF TROTTERS

VOLUME I OF
"THE HORSEMAN LIBRARY"

PREPARED BY THE
EDITORIAL STAFF OF
"THE HORSEMAN *and*
SPIRIT OF THE TIMES"
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Introduction.

There has been a great demand in recent years for an authoritative treatise on the "Care and Training of Trotters." The only books on the subject are out of date. We have endeavored to fill this demand.

This book does not represent the ideas of one man, as in past treatises, nor of a few men, but of many. Practically all the leading authorities have kindly collaborated with four members of the editorial staff of "The Horseman," during a period of about six months, in the preparation of this work.

The authorities listed herein have assisted either by letter, personal interview, or in an editorial capacity, to the contents of this book. We desire to extend our thanks to all. Quotations have been made, in a few instances, from the works of Charles Marvin and John Bradburn, but credit is given each case.

THE PUBLISHERS.

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Chapter I—The Suckling Colt.

THE mare about to foal should be placed in a warm box stall, especially if the colt comes early and in a cold climate. The colt might contract pneumonia from the shock to its delicate constitution by exposure to cold air.

The first attention to the colt should be to the umbilical cord (navel string). There are two methods of treatment, each has its adherents. The older horsemen, and some younger ones, prefer to tie up the cord about a half inch from the body, and then cut it off, just below where it has been tied. The younger horsemen and many veterinarians advise against the tying up of the umbilical cord, since it has been found in some cases to imprison the germs of navel disease which had gained entrance to the navel before being disinfected. James Hazelton of Boice Stock Farm, Frankfort, Ind., who has raised hundreds of colts successfully, is one we recall who does not tie up the umbilical cord.

As soon as possible after the colt is born squeeze out the gelatinous contents of the umbilical cord, tie it up if you will, but in any event paint it with an antiseptic solution, or, better still, dip it into such a solution. Dr. A. S. Alexander

prefers an antiseptic solution containing 2 drahms of powdered corrosive sublimate to a pint of boiling water, to which when cold has been added, 3 drahms of tincture or solution of chloride of iron (Label bottle "Poison"). Use this solution twice a day until the cord drops off. Dr. W. A. Barber of Springfield, O., uses "a solution of 9 parts of carbolic acid, dissolved in 1 part of alcohol, with 25 parts of camphor added, giving a clear oily solution that may be applied without fear of cauterizing and many times more efficacious, I think, than corrosive sublimate."

A different method of accomplishing the same end is advised by the Percheron Society of America in its pamphlet, "Facts About Percherons," and excellent results are reported by those breeders who have tried it. This method of treatment was recommended to the Percheron society by Dr. R. R. Dykstra. Tincture of iodine is first applied to the cord and the area immediately surrounding it. After this apply a drying powder every half-hour for a period of three or four hours, or until the cord is thoroughly dried up. This drying powder is composed of equal parts of powdered gum camphor, starch and alum.

After the navel is attended to the next thing on the program is to inject some warm water into the colt's rectum so as to start the bowels working regularly. Some men use an injection of one ounce of sweet oil in a quart of warm water. Others use

castile soap suds in warm water, but this is not widely recommended as the soap is thought to be too irritating. Users of the soap suds injection claim it is not irritating, especially if glycerine is added. Olive oil makes a satisfactory injection. In extreme cases give an ounce of castor oil. A horseman writes: "For enemas would suggest the use of a few tablespoonfuls of liquid soap instead of castile soap-suds. It is non-irritating, and being of an oily nature serves a double purpose. Great care should be exercised in giving injections. Serious harm may result from roughness as the tissues that you are working upon are in a very delicate condition at this time. Gentleness should be observed in all things pertaining to the handling of a youngster. He is better off without your medicine if you have to use force in administering it. Nature will do a lot for the colt if you let it alone in almost every case."

Dr. S. R. Howard says: "The best rectal injections, in my opinion, are: emulsion of slippery elm bark or warm cow's milk. No harm can be done by any amount used, as they are natural in their action."

First Milk Important.

Soon after the colt arrives it will, if strong and healthy, struggle to its feet (more or less clumsily at first, of course), and suck. If it is too weak to rise it should be assisted, for the first nourishment will strengthen the colt at a time when

strength is absolutely necessary. The first milk also contains a natural laxative which is beneficial to the colt. If the colt is weak and will not suck even when assisted, the mare should be milked and the first milk, while still warm, given the colt from a bottle with nipple. If the colt will not suck nipple use a dessert spoon and pour the warm milk down its throat. Do not be in too great a hurry to get the colt up to suck. Any time within the first hour will do.

We will say nothing of the care of the mare after foaling (such as the removal and sanitary destruction of the after-birth) for we are dealing only with the colt.

As soon as possible after foaling, which we will assume takes place indoors, the stall should be thoroughly disinfected, the bedding should be burned, the floor sprinkled with lime, and fresh bedding laid down. For several weeks the bedding should be changed often. Cleanliness will usually prevent navel disease. In Kentucky and farther South most colts are foaled out doors. Harry Burgoyne of Walnut Hall Farm, Donerail, Ky., and Ed. Willis of Patchen Wilkes Farm, Lexington, Ky., prefer to have the colts foaled out doors, if the weather is not too cold.

Treatment for Diarrhea.

When the colt is from seven to ten days old it may be troubled with diarrhea, due to the mare coming in heat or for other causes, in which event

keep both mare and colt in a quiet place. Milk the mare dry and doctor the colt.

John Bradburn strongly advised giving colts troubled with diarrhea a blackberry cordial, full directions for the making of which are described in his book "Breeding and Developing the Trotter."

A horseman writes: "John Bradburn's blackberry cordial has not proved sufficient in my experience, especially in obstinate cases. I have secured the best results from paregoric and aromatic syrup of rhubarb, equal parts."

A favorite prescription of Al Thomas, and one with which he once saved the life of Alta Axworthy, 3, 2:10½, when she was suffering from a severe case of diarrhea, is: Take colt out of sun (if turned out) and give it the yolk of an egg to which has been added 10 to 20 drops of tincture of opium. Three or four doses a day should be given until relief is obtained. Another prescription is an egg in a pint of milk given three times a day until cured. Another good prescription is a teaspoonful of lime water in several of milk, given every three hours. At the Allen Farm, Pittsfield, Mass., the remedy for diarrhea is limewater.

Roy Miller writes: "As to diarrhea in colts, let me give you a suggestion which I received from Major Daingerfield, to whom every breeder in this world has to 'take off his hat.' He told me that his colts were never bothered with diarrhea, to speak of, and especially soon after foal-

ing, as he made it a point to put the mare on a diet that tended to make milk about four months before foaling time. About two to three weeks before foaling time, he fed the mare the same amount of feed she would receive after foaling, and never increased the feed of the mare for several weeks after she had foaled. He claimed that, in doing this, the blood of the foal was of the same richness as the blood of the mare. He claimed that, in nearly all cases, diarrhea came from increasing the feed of the mare too soon after her colt was foaled.

Care must be taken to keep the colt's navel clean, so as to prevent "navel disease," but if trouble develops call a veterinarian at once and insist on a serum treatment. If no veterinarian is accessible (and in that emergency only) insert into the navel, with a bulb-syringe catheter, any good antispetic solution. For instance a one-quarter ounce of creolin to two ounces of boiled water. Insert the catheter as far as an opening can be made without forcing. The injection should be continued from time to time till the navel is healed and closed. The symptoms of navel trouble are: Colt acts dull, there is a leakage from navel; colt is stiff in knees, hocks, or hips, with sometimes a formation of pus around knees, hocks or abdomen. Some people advise lancing to relieve the swelling, others prefer letting Nature remove the foreign matter.

We will state here that it is not the intention to make this in any sense a veterinary treatise. Where thought best, simple home treatment for common ailments will be made mention of in simple terms. In most cases a veterinarian should be called.

In Pasture.

As soon as the colt is strong enough and when weather is good, mare and colt should be turned into a paddock an hour or two, morning and afternoon. The length of time the colt is turned out should be gradually increased each day until finally colt is out all day if weather permits, but taken in at night. When warm weather comes (it is assumed we have a spring foal), the mare and colt should be turned out in pasture. If large pastures are used too many mares should not be turned out together. No matter how large or small the pasture, turn the mares and colts into the pasture at intervals until the desired number are in but never turn out the whole drove together, as the mares may run about and kick each other, and injure either themselves or the colts. In the South mares stay in pasture practically the year around. Large open sheds are built for them, with southern exposure, for such occasional protection from weather as they will need.

The system of feeding brood mares with suckling foals, and young horses, at Palo Alto Farm was somewhat different from that usually prac-

ticed. They ran to grass, were fed hay, and night and morning were fed steamed or cooked food—sometimes oats and sometimes barley; they were also fed carrots. Long before the colt was weaned it learned to poach on its mother's meal, and when at four months of age it was weaned, it was fed the same as a yearling or two-year-old.

If the mare comes in season at thirty days, the colt may again be troubled with diarrhea. By this time the colt will ordinarily be strong enough to go through such trouble without ill effects. If the diarrhea continues, however, take the mare from pasture and keep her in a cool, quiet place, take her off of grain feed entirely, and feed her hay or grass for from five to eight days till colt's condition is normal.

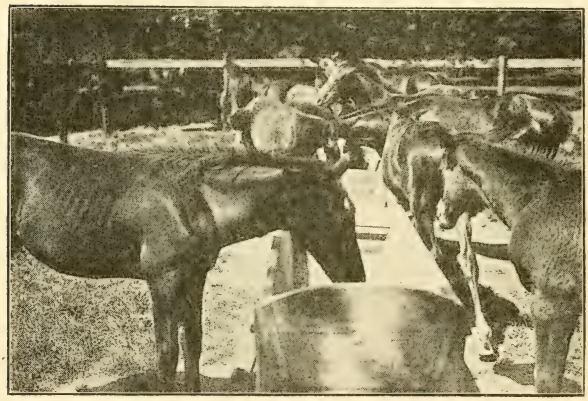
When the colt is two months old its feet may be leveled for the first time with a rasp; do not use pinchers. The feet should be leveled once a month, otherwise the wall of the foot will grow down and break off unevenly. Some claim it is not necessary to trim the feet till weaning time. This subject is treated in detail in a later chapter on "Care of Colt's Feet," by Dr. Jack Seiter.

If the mare does not thrive on pasture at first, she should be taken up each morning and fed some crushed oats and bran equally mixed, say four quarts each morning. She may also be given green corn, sorghum, or alfalfa. She should stay in-

doors until the middle of the afternoon, when she should be fed again, omitting the green feed, and turned back into pasture.

Feeding Paddock.

About the middle of summer colts will require additional nourishment. Feeding paddocks should be built in the pastures, as illustrated, which will



allow only the colts access to the troughs. On most farms the troughs are placed about 2½ feet from the ground. It is well to line them with zinc so that the attendant can keep them clean. Some have troughs only four inches from the ground. These low troughs are not widely used because colts are liable to jump over them and knock their

ankles and skin their legs. Musty food should not be allowed to accumulate and troughs should be cleaned out after each meal. Colts may be fed once a day, or twice, according to judgment, depending on amount of extra nourishment necessary. Feed as much as colts will eat up clean. Some horsemen use a thoroughly mixed feed in proportions of two bushels of oats, one of wheat, one-half of cracked corn, fifty pounds of bran and twenty pounds of oil meal (not oil cake but ground flaxseed meal). Colts, as well as mares, should be salted once or twice a week, or leave rock salt where it can be licked as desired.

Every stock farm owner should know the percentage of limestone in his soil. Fast trotters never came from lime-deficient regions. Horses raised in such localities are apt to be week-boned, therefore unsound. If your soil is deficient in lime take a piece of fresh-burned lime the size of a hen's egg and drop it into the water troughs once or twice a week. Speaking of water troughs they should be cleaned out regularly.

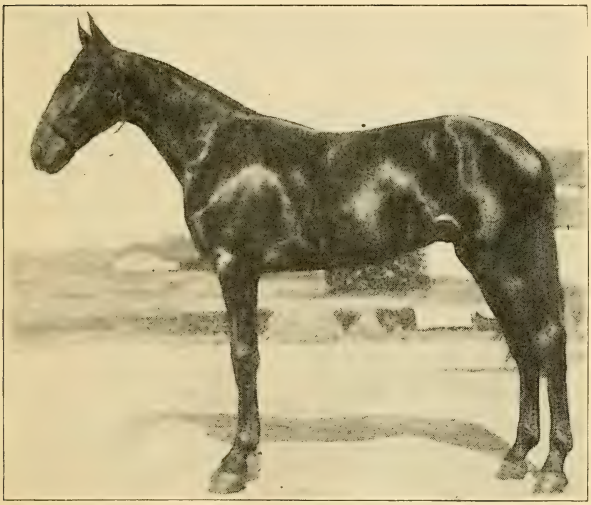
"As the twig is bent the tree inclines," so particular attention should be given to a colt in the first few months of its life. As John Splan once wrote: "Anyone who can not control his temper should never be allowed to have anything to do with a colt. * * * You should begin to impress the colt from its earliest life that man is his friend, and the foundation of his education is laid."

Mannering the Colt.

Many good horsemen put an easy-fitting halter on the colt when it is ten days old, which makes the colt easier to manage in the stall. On several large farms, such as Allen Farm, Pittsfield, Mass., and White River Stock Farm, Muncie Ind., colts are thoroughly halter broken at this time. The halter should be taken off when the colt is turned out for the summer. The colt's feet should be picked up and handled from time to time. Amos Whiteley of White River Stock Farm, says: "We commence mannering the colts almost as soon as they are foaled, and soon accustom them to being handled. Our colts are haltered when they are two or three weeks old. We use an ordinary halter, and get a piece of half-inch hemp rope, about two and a half feet long, thoroughly wrapped at one end, or near the end, and with a snap hook attached to the other end, and snap the rope into the halter, letting the colt carry or drag it so as to become accustomed to carrying something, and in a way, to be guided by it. Our brood mares are all nicely mannered and companionable; in fact, when I go into the brood mare pasture, the mares always expect some sugar, carrots, apples, or something that they like, and while they are enjoying their little treat, the colts are becoming accustomed to being handled, and soon begin to look for something for themselves. By treating the colts in this way, they are almost

broken before they are weaned, and in many cases our colts wean themselves, or substantially so, as they are put on ground feed, oats with a small portion of rye and bran. We try to have them learn to eat good before they are weaned."

The main things to observe in the care of suckling colts are common-sense and kind treatment. Nature should be allowed to do as much of the work as possible.



Airdale, 2:15¾ (in 1912), World's Champion Yearling Trotter.

Chapter 2—The Weanling Colt.

HEN fall comes, the suckling colt should be weaned. Some brood mare handlers take the colt away from the dam and milk the mare dry each day. This is done on the Savage Farm and McKennan farm. Others allow the colt to suck twice a day for several days, then once a day for a while, till the mare dries up of her own accord. One prominent colt handler says: "The first method is the right one and best when you have experienced help or can look after mare and colt yourself, otherwise the second method should be used." Another says: "Don't tantalize the colt by keeping its mother around while weaning—it is like cutting off a dog's tail a little at a time."

A horseman writes: "I wean my colts by taking them off the mares at once and taking the mares far enough away so that they will not hear each other. Of late years I have been weaning by the signs of the Zodiac. This may sound a little ancient, at least to some people, but it does not cost anything, and I have found that my mares and colts both do a great deal better. Before I tried this I had more or less trouble with mares' bags caking and colts worrying a good deal for

a short time, but under this system I have had no trouble either way."

Joseph McGraw writes: "We wean a colt by taking it away from dam and milk mare for four days, twice a day, then once a day till dried up. I use equal parts spirits of camphor, tincture of belladonna and lard (no salt) on mare's bag."

The colt should be placed in a box stall and haltered. Use a good, strong five-ring leather halter, one that fits right and is not too tight nor too loose. One horseman then proceeds to break the colt to stand tied. His advice is: "Take a ⅝-inch rope, make a small noose in one end, pass the rope around the colt's girth, slip the plain end through the noose, and draw the rope tight around the girth, pass the loose end of the rope between the colts' legs and up through the halter ring. Tie end of rope to a ring in the stall and leave colt stand for an hour or so each day. This will break the colt to stand hitched, which is an important part of its education." Other horsemen do not tie colts in the stall until after they are thoroughly halter broken.

Joe Heather of Hopper Farm writes: "I put a good fitting halter on the colts the first thing. I attach a lead and just let it drag. The next thing is to get a good quiet man that likes colts and put him in with them, brushing them and fussing with them. I find that when a colt has run loose in the stall a few days with the halter

lead dragging it is no trouble at all for it to learn to lead. I like this way better than putting ropes around their girths and hind quarters, and such things as that, as I have known a good many cases where colts were injured more or less."

Feeding.

After weaning, the colt should be well fed. Oats is the usual food, together with timothy or prairie hay. Bran may be mixed equally with the oats, although this will not be necessary if clover or alfalfa are available. Some authorities consider oats too hard for young colts to masticate and give ground feed and clover hay.

Roy Miller writes: "I take it we are all trying to raise colts, fit in constitution, size and endurance, to start in the futurities; therefore the feeding of the little fellow, just at this age, is a very important consideration indeed. I note you mention oats and timothy hay. I suggest two quarts rolled oats, one quart bran, one pint cracked screened corn, and a handful of rolled barley, to a feed, three times a day, with all the straight clover hay that a colt will eat, twice daily. If a breeder is forced to eliminate any of the bill of fare I have mentioned, I suggest he leave out anything he sees fit except the clover hay."

One horseman writes: "As to feeding them, I give them clover hay, with a small allowance of corn, and all the good oats they will clean up. I

also like sowed cane, which I think makes an excellent feed for young colts in winter."

J. L. Dodge writes: "Regarding feeding, I believe that too much is worse than too little. You seldom see a sick hungry man. If your colt doesn't thrive and you increase his feed and he improves you know the reason. If he gets sick and you increase his feed and he gets worse, what do you do? Over-feeding causes nearly all the sickness. One big strong colt eats no more than some runts. It's what they digest, not what they eat, that does them good. Too much rich food makes too much expensive manure and heavy doctor bills. Feed the colts all the good oats and timothy they will eat up clean, and see that they get exercise enough to warrant such feeding. Reduce the feed when sick or not exercising. Don't feed rich food at any time. During the time of strenuous work, feed crushed oats, but don't practice this. Fletcherizing would leave us no stomachs at all in a few generations and concentrated foods do only for emergencies."

Ben White writes: "I think the most important thing of all is the feeding of the weanling, and no man could improve on what Roy Miller says in regard to feeding youngsters. I like a few carrots three times a week to feed to colts. They will drive worms from a colt and keep their bowels in good shape."

The attendants should handle the colts carefully so as to inspire confidence and friendship. The colt should be groomed daily in order to improve its coat and to break it to the use of the currycomb and brush.

Halter-Breaking.

After the colt has become accustomed to a stall, the next thing is to halter-break it. The horseman who advised tying the colt in stall, with a rope around girth, makes this suggestion: "The first day the colt is weaned and after it has stood in the stall for awhile, the rope should be taken off and a plain leather strap substituted. Bring the dam out. Let the colt go up to her, then have an assistant lead the mare away. Then lead the colt after her, until the colt gets used to being led about. Then take the mare away, without letting the colt see you do so, and continue the lesson in leading."

Dr. W. A. Barber writes: "My idea as to the best time to halter-break a colt is the next day after it is foaled. Slip a good fiting halter on the colt and handle it at every opportunity. If you have a boy that loves a horse he will soon have the colt broken to halter as well as to lead at will. From that time the colt will grow up to know what restraint is."

Ned McCarr, colt man at the Savage Farm, writes: "We halter-break a colt by putting a piece of three-eighths-inch bell cord around it,

the same as a breeching, and then a short piece to run over the back, directly over the flanks, connecting both sides, to keep it from falling down over the heels; then the two long pieces are run through the halter ring. The colt breaker takes the halter shank in one hand, and the two ends of the cord in the other, then gently pulls on the halter shank and gives the cord a sharp jerk. The colt will generally make a jump forward, and in some cases attempt to kick, but it takes, as a rule, only one lesson for the colt to grasp the idea that with a pull of the halter shank it will also receive a jerk on the cord, so that after a few lessons it will obey and lead on the first pull of the shank." Frank E. Alley of Roseburg, Ore., uses this same method to break his colts to halter except he is careful to give "an equal pull on the halter rope and the rope which goes around the colt. Give a steady pull and the colt will always step forward to get away from the pressure behind."

"I have always considered that I knew something about breaking colts, but my superintendent, Mr. McDonald, showed me a new wrinkle in bitting a colt, which is the finest thing I have ever seen. He uses the ordinary bitting rig, consisting of a surcingle, back band (with a ring on either side), crupper attachment, plain, open bridle without check, and a soft leather bit with a leather guard at either side of the mouth. The

colt is led out into the yard or paddock and a short strap attached to the bit on one side and tied through one ring on the back band, tight enough to draw the colt's head around to one side. The colt is then turned loose and allowed to wander where it will. As the head is turned to one side, the colt will continue to go in a circle and cannot run. After a few minutes the strap is changed to the other side, and in a very few lessons the colt is perfectly bridle-wise. An important advantage of this method is that you can go up to the colt at any time, for it is impossible for the colt to get away from you, and the colt will learn the purpose of the bit without inflicting any damage whatever." This method of breaking is certainly a success with Mr. Alley, for he furnishes us a picture of four weanlings in motion, hitched four-in-hand to a light cart, and all well-behaved.

Leading Beside Pony.

You will now have to decide whether you are going to break your colt to lead beside a pony, or not. Authorities are at variance on the subject. One man will say it "makes speed," another "it is harmful," while still another will take the middle ground and say "it does not make speed, it is not harmful, and it will add to a colt's value if it passes through a sale ring, or if you wish to show it to advantage to a possible purchaser." Even among those who break their colts to lead beside

a pony, there is some difference of opinion as to when this should be done. One prominent colt man advises breaking the colt in this manner within a day or two after weaning. He says the advantage of breaking beside a pony the next day after weaning is: the colt will be lonesome and will follow the pony naturally. Start the lesson in a yard with an assistant to go behind the colt till it is used to leading. The leading should be done every day till the colt is well broken. If the colt handler is not an expert in leading colts beside a pony, give only a few lessons in this direction, as the colts will get to side pulling and will learn other vices. If the handler is expert in this direction, the colt's leading may be increased, with an occasional brush at nearly the limit of its speed, but do not overdo it. Let the colt have his head and trot as naturally as possible.

O. H. Sholes is one who does not believe in breaking a colt to lead beside a pony. He says: "It is time thrown away. It is effort in the wrong direction. We drive horses in races, we do not lead them. It does not add to their value, but diminishes their worth. It costs money to make speed beside a pony and you have to do it all over again when the time comes for driving. I don't think a colt should be taught to follow."

Roy Miller writes: "I am not in favor of leading colts, never was, and I don't believe I ever will be; however, a great many of our very best colt

trainers are advocates of this method, and as you say, if carefully done, and within reason, by some one that understands his business, good results can be expected."

Booting.

Now comes the disputed question of when to boot a colt. One colt man writes: "Before being led at any speed the colt should be fitted with a few boots for protection against injury. Put on shin boots in front and behind, quarter boots in front and scalpers behind. If the colt has not been shod, then in place of scalpers use a small rubber bell-boot behind. In booting remember that an ounce of prevention is worth a pound of cure. If the little fellow once hits himself he is apt to lose confidence. It is better to put on too many boots than too few. When the colt is turned in paddock, put on front shin and quarter boots."

Another man writes: "Don't get too anxious to put on boots. When a colt gets sick because it has scalped a little, then it is time to inject a little new blood into your great stable. When you see marks on your colt's feet, call them to the attention of your blacksmith, or write the shoeing editor of The Horseman. The chances are the angle of the foot is wrong."

Ned McCarr says: "I never put boots on colts or shoe them until they are perfectly broken and ready to be trained for speed. This idea of booting and shoeing a colt, that is not perfectly broken,

is, to my mind, a bad one, as they cannot hurt themselves if they are not shod, and the boots are a decided hindrance to freedom of action, and are apt to give a wrong idea as to how the colt is gaited. I prefer to train them in the afternoon, turning them out in the morning and then handling them after they are brought in. In this way they are not apt to be so frisky and consequently behave far better, and there is less danger of their being injured."

While the colt is receiving its lesson (which is usually in the morning), have its stall cleaned and bedded and a little hay thrown in for it to nibble at on its return. Let the colt stay in the stall about an hour, or until it is entirely cooled off, and then turn it out in a paddock for a few hours.

The colt's feet will need attention. One horseman's advice is: "Keep hoofs rasped to proper angle and level once a month."

Some authorities insist the colt's feet should be cleaned with a foot pick every morning, others object to using a pick, but agree that the feet should be handled. The preponderance of opinion is with the former method. Nature requires a certain amount of moisture in the foot, and if colts stand on dry ground, some horsemen advise packing the feet, at least three times a week, with some kind of hoof dressing. Some use clay, while others object to it, because it draws out the nat-

ural oils. One horseman says: "Cut out the oil meal packing, as it was discarded with the 1492 methods. I prefer clay." A packing recommended by a well-known horseman is old-process oil meal and water mixed to the consistency of bread dough, with any good indisfectant added to prevent souring. This packing supplies moisture and oil and prevents thrush. Other horsemen object strenuously to packing of any kind on colts. One horseman writes: "Don't pack the colts' feet. If you can't think of anything else to do, sit down and smoke. If you don't smoke, play with the dog." Another horseman writes: "Outside of the feet being kept properly trimmed and kept clean, we do not use any packing or hoof dressing until after they are shod. Nature provides for this and a foot will keep in a good, healthy and soft condition, without any artificial methods, until the hoof is shod. Then it is time to provide the necessary moisture, that the shoeing takes away."

Bitting.

A prominent colt man writes: "I bit all my colts with a halter, using a double snap, with one snap in the halter ring and the other in the bit. This can be used for half an hour in the morning and evening. After the colt has become used to the bit, then by all means use a bitting harness, first for twenty minutes to half an hour morning and evening, and, after a few days a little longer,

and it isn't a bad idea to turn a colt out in a paddock for a half an hour with it on."

Joseph L. Serrill writes: "I think looking after the colt's teeth a very important thing. If a colt fights the bit much, look at his mouth, and you will probably find a sharp tooth has cut his cheek, which is very sore."

Ground Breaking.

The colt is now ready to be ground-broken, that is, broken to harness. Get a harness that will fit it properly and put it on carefully and slowly. Let the colt stand in the stable with the harness on a short time each day till accustomed to it. Then the colt should be driven in the barn. Have two men at first, one to lead the colt, the other to hold the reins. One horseman objects to the preceding sentence. "Don't have two men to handle a poor little colt. A fifteen-year-old boy can give a colt its first lessons, or one man can, if he is fearless and not too heavy in the arms and doesn't make a sled of his feet." Teach the purpose of reins, that is, to turn in either direction, or to back. It is important to teach the colt the command "whoa," and to stand still, especially when tied to a hitching post. Be careful in harnessing not to check your colt too high. Many colts are unbalanced by checking too high.

Ned McCarr describes his method of ground-breaking: "After our colts are broken to lead, a harness is applied. Care is taken to see that it

fits snug, especially the bit, which is a leather covered one. One attendant leads the colt and another takes up the lines and drives it. We do not have to repeat this performance very often, as the colts can be driven alone, after a few days, depending naturally on the headway made."

Joe Heather writes: "After colts are thoroughly gentle I slip a harness on them, using a common slip-noose halter, with a long lead, and commence to break them to drive, using the halter to control them. This avoids bruising and hurting their mouths which are very tender at this time. I do not need any attendant to help me drive them the first time or two as some others have suggested, as they don't work together all the time, making more or less confusion with the colts, irritating them unnecessarily and so on. I have never tried to drive a colt under this plan that within thirty minutes I could not drive him almost anywhere I wanted to go. Of course this depends on his having been properly handled by the man at the barn. After he is well ground-broken and thoroughly bridle-wise, there are very few that will give any trouble when hitched to a light cart."

One colt man writes: "I hitch my colts to the lightest kind of a low-wheel rubber-tire cart. With an attendant to lead them a short distance, and the driver up, they are started off, and, as a rule, they go on and pay no attention to the rig at all."

Before hitching the colt to cart, some horsemen run two light poles through the shaft holders and let the colt become used to feeling them along his sides. If this is done, they claim it is not necessary to hitch the colt to a heavy breaking cart. This advice is objected to by one colt man, who says: "Don't run poles through the shaft holders. Don't play dog with the colt." Another expert writes: "Cut out the poles, as we are, at this day and date, breaking intelligent horses, and the broncho methods don't go. Any colt that is properly ground-broken, and has been driven for three weeks, at the age of a weanling, will be ready to hitch to the lightest bike cart that is made." Many good colt breakers object to the use of a very heavy cart, preferring a lighter one from which the driver can descend quickly and easily. On the other hand, one man says: "Don't think about a cart you can get out of quickly, but one you can stay in easily. If you are a coward and too good to die, give up breaking colts. They know when you are afraid and will show you a fast time." Charles Marvin, in his book, wrote against the use of carts, and advised a skeleton wagon, but later in life he told Al Thomas he had changed his mind and given up the use of the skeleton wagon.

Hitching to Cart.

The colt is now ready to be hitched up and driven. Take an assistant along, as his help will be required in cases of accident. An objection is

raised to this by a horseman, who writes: "Don't take an assistant along. It is no time for visiting. If you are afraid of the colt, let your wife drive it the first few times." Some colt breakers prefer to hitch the colt alongside an older and well broken horse for its first few lessons, but this method is somewhat antiquated and little used. Some advise carrying a whip from the first, so that the colt will become used to one, but do not be in too great a hurry to use it. An objector to this advice says: "Don't carry a whip the first few times. The colt doesn't need whipping." Be careful about pulling on the lines so as not to make the colt a "puller." One prominent trainer, in the early lessons, always uses a rope halter under the bridle, with the rope extending back to the seat of the cart and always pulls the colt to a stop with this, and even guides to certain extent with it. Another trainer says: "Don't be afraid of the bridle making pullers. It's the driver who does that."

Do not break a colt before a crowd of spectators. Do not lose your temper. Do not pull the colt over backwards.

Dr. J. C. McCoy says: "The way to begin breaking a colt is to always have the same man harness it and the colt won't be scared. Let the one who hitches the colt drive it around with the harness on for about a week and be sure not to hurt its mouth. After the week is up, hitch the colt to a cart and walk it for another week. Never

going faster than a walk, if possible. When this has been done, the colt is ready for anything, and he will soon show whether he is of any account or not. Above everything, in breaking the colt, don't use any check for about a month."

With the exception of leading beside a pony nothing has been said in this chapter about "making speed," as that will be treated in the next installment.

Shoeing.

We have purposely reserved for the closing paragraphs of this chapter the subject of shoeing, as authorities differ as to just when the colt should be shod. Some have gone so far as to suggest light front shoes on colts in pasture late in the summer, but this is a theory and seldom, if ever, practiced. Others shoe shortly after weaning, or just before leading beside a pony, especially when the soil is sandy. Others do not shoe until the spring of a colt's yearling form. This subject will be treated in a separate chapter by Dr. Jack Seiter.

The natural gaited colts will need only light shoes for protection. Double gaited colts require heavier shoes at first, but the weight should be gradually reduced, if possible.

In applying weight some horsemen object to the use of toe weights, unless sure a colt needs them, and prefer heavy shoes. Toe weights have their uses, they claim, but sometimes get a colt to hitting his elbows. On the other hand, Roy Miller

writes: "I consider toe weights one of the most important inventions made to assist trainers in the training of horses of all ages, and especially colts. It is safe to estimate, I should think, that fully 90 per cent of the progressive trainers of to-day use toe weights. A heel weight (or loaded heel boot) is just as essential for some colts, and has been used with a great deal of success here at Lexington, for the past half-dozen years."

In cases of defective gait, a colt handler must use his own judgment or consult an experienced farrier. It is just as necessary to have the advice of an experienced farrier in cases of defective gait, as it is to call a veterinarian when a colt is sick. The colt's feet should be trimmed regularly.

Finally, remember, in the words of Charles Marvin: "There is nothing more senseless and injurious than punishing a horse or a colt for not doing what he does not understand you want him to do."

Chapter 3—"Making Speed."

TRAINERS are not agreed on when to commence with a colt to "make speed." Some trainers do considerable speed work in the fall, right after breaking, but the majority wait till the spring of a colt's yearling form. In these articles we are assuming that a colt is being trained for the futurities.

In the last chapter our colt had been broken to drive. After breaking the colt should be jogged until it is accustomed to all strange sights and experiences. This jogging does not call for any speed.

But sooner or later the time comes for speed work, or "making speed." The old way was to drive a colt for a certain distance, say half a mile, at a slow gait, and on each succeeding occasion drive him a little faster. This system is still in use but has been superseded to a great degree by the "brush" system as introduced by Gov. Leland Stanford and made popular by the success of the colts trained at Palo Alto Farm by Charles Marvin. Marvin is often credited with having introduced the brush system of training but in his book he tells us that it was in use when he became connected with the famous California establishment.

Before proceeding with an explanation of the brush system, the opportunity here presents itself to mention a few hints about the hitching and driving of a colt for speed work.

Pulling.

"No foot, no horse" is an old and true axiom, but "no mouth, no horse" is just as true. Great care should be exercised not to spoil a colt's mouth. Do not teach a colt to "pull," by "taking too strong a hold" on the reins. Drive with a light hand. Hold the reins just tight enough to "steady" the colt in his gait and to prevent stumbling or swerving. (It will be understood that these remarks refer to colts just being broken. An old-time confirmed puller cannot be driven with a loose line, unless one is lucky enough "to break him" of the habit.—Ed.) If you take too strong a hold the colt will "fight the bit," or "lug," or become unbalanced in gait or acquire a bad temper.

The habit of pulling is sometimes caused by checking the colt too high. Many successful trainers do not use a check until the colt has had several weeks of speed work. When the check is put on let it hang a trifle loose at first, adjustment can be made later as experience demands. If the colt starts to pull when you jog him, bring him to a walk. Then start him up again slowly. Repeat this till he learns to jog without pulling.

It is important to teach the colt to trot at uniform speed on a lightly held line, when started at a certain gait. An intelligent colt will soon learn this habit.

A colt should be taught to respond to the voice, so that when he shows an inclination to "take the bit in his teeth," the driver can "talk him back." As a colt's speed increases a firmer grip on the reins will be necessary to steady him in his gait, and keep him in his stride—but don't pull.

It is important for the driver to learn how to "catch" a colt when it makes a break. Marvin wrote: "My plan is to give him a square pull back, and swing him very slightly to one side, giving him a chance to catch in the cross stride." "Catching" is an accomplishment which can be acquired only by practice, certainly not through written advice.

Don't lose your temper when a colt leaves its feet, don't jerk nor snatch nor see-saw. It is hardly necessary to advise against teaching a colt to be a "handy breaker." This was an old time idea that happily has been practically discarded.

Do not allow the colt to learn the side-pulling habit, which may be caused by an uneven hold on the lines, or by poor teeth, or by too large a bit.

If a colt starts to hitch, scalp, or forge, correct the evil before you go on with its speed lessons.

As to a whip, don't carry one unless you know how and when to use it.

With these preliminary remarks we will proceed to take the yearling to the track for a speed lesson on the brush system; but first let us warn the driver not to start in speed work until the colt is properly hardened and "legged up" for the coming ordeal. Inasmuch as Marvin was the great exponent of this system we will quote his own words:

"Colts need practically no jogging, yearlings certainly none whatever. Of course no colt or horse should be worked soon after a meal. You will find the yearling (although a trifle nervous) ready to work as soon as you get him on the track. Start him up at a good, fast jog for about 150 to 200 yards. Then turn slowly, giving him time to get his breath, and let him brush back a little faster. After going about the same distance, stop again, turning slowly, and send him back again, this time carrying him right up to his clip at some point of the brush, preferably near the end of it. In all his work, especially when the brushes are sharp, be careful to let him get his wind at each turn, and after this sharp brush that I have just described give him a little longer to breathe than you did before. Now straighten him out and brush him up the stretch again about the same distance, going up to his clip about the last of it, and that will be enough work for that day.

"Take him in where no cold draft can blow on him, and take off the harness and boots. Give him a swallow or two of water, rub him off lightly, and let the boy walk him a little, then put him in his box and leave him undisturbed, so that he can lay down, as a colt youngster will, and rest.

"As I have said, young colts require little jogging and no sweating or scraping. Young animals do not take on fat internally like matured ones, and there is in fact no superfluous flesh in this rapidly growing period. The colt requires not to be reduced, but rather to be made stouter and stronger. Physicing, sweating and scraping are just the things no colt can

take and thrive. It stops his growth and muscular development to strip him of his flesh, for the growing body, the maturing muscle and bone, need that nourishment which is only afforded in a condition of marked thriftiness. Only in this condition will the colt be in good fettle and spirit, and capable of taking his work with relish and being benefited by it. It therefore behooves the trainer to watch constantly that the colt does not go back in condition, for this loss of condition may be at first almost imperceptible. It is all the better if the colt carries a fair degree of flesh, which will not be of the soft kind with the work here prescribed. Keep him in good, vigorous condition, so that he will perspire freely with work, but leave heavy blankets, hoods, sweating and scraping alone.

"The first day's training in harness should be adhered to without any increase for the first ten days or so. From four to six brushes will be sufficient at first, but in say, two weeks, it can be increased a little. Don't increase the length of the brushes, but the number and speed of them, but this increase must be slow and gradual, according to the size and capacity of the colt, and the relish he shows for the work.

"It is a good plan to let the colt up for two or three days, every three or four weeks, for a run out and a rest. This will freshen him up, and these breaks in the monotony will, if he is not overdone or harshly worked be an effective preventive of track sickness and staleness. After each little let up he will go to work again with more keenness and vim. Barring these rests, the colt's work will go on every day—Sundays excepted—presuming that he has been kept well and right. When he is two years old he will take more work, but not a greatly increased distance. I am not prepared to say that the length of the brush should ever be increased to over a quarter of a mile. We are now, mark you, working our colt for speed. You will, no doubt, inquire how a horse can trot a race without being worked mile heats. You cannot cut much of a figure in a race without speed, and, after you have developed speed sufficient to go away from home with, it will be time enough to condition him to carry it. You must have the speed before you

can win races. It is of no use to condition your horse to go mile heats, if you haven't first got the speed to beat somebody else. You will see, then, that the Palo Alto system proceeds on the logic of the author of the recipe already quoted for cooking the hare: First catch your hare. We aim to first develop the speed, and after that to condition the horse to carry it. The merit of this system of training in short, sharp brushes lies in the fact that it is the quickest and most effective way of at once toning up and hardening the muscles, and bringing out a high rate of speed—of teaching the colt to trot fast."

Marvin's book was published in 1890. We have always considered it unfortunate that he did not publish a revised edition before his death, because he changed a number of his methods before his death. However, he never discarded the brush system explained above.

Marvin's book was widely read—especially by owners, who tried to pass along their absorbed knowledge to their trainers, with sometimes laughable results, so that the term "Marvin-book-trained-owners" became quite common. As time flew by Marvin's book and other contemporaneous works became out-of-date. There was a call for a modern treatise on the subject of training trotters, which we are endeavoring to fill by the publication of this book. By combining the ideas of practically all of the various authorities on the subject, we hope to escape the criticism which has been heaped on past effort.

Special care should be taken at this period of a colt's life to see that it has plenty of water.

Fix a hoop in the corner of his stall so that the water bucket may be kept at all times in reach of the colt. Naturally, you will not allow him to drink much after a work-out until he is cooled off.

While it is not wise to load a colt up with boots, he should have enough for protection. You will doubtless have discovered, during the first lessons to cart, what boots he will need. Be especially careful the colt doesn't speedy-cut otherwise he will get to going "sideways" and in an otherwise bad-gaited manner. Do not put the boots on too tight, but as snug as possible, without interfering with circulation. Of course, the boots should be cleaned each time after they are used.

If, in breaking, the colt has not been taught to stand still, while being hitched or unhitched, you had better complete that neglected part of his education before doing much speed work. In unhitching be sure everything is loose before backing the cart away.

Horsemen disagree about when to start bandaging a colt. One collaborator writes: "After speeding or jogging a colt I always apply leg wash, then wrap the legs in cotton and put on a set of bandages. After the colt is thoroughly cooled out, the bandages should be removed and the legs brushed out and given a good hand rubbing of about fifteen minutes to each leg.

Brush the colt off and then put him away in cotton. Be sure and pack his feet, for they are growing and developing and need plenty of moisture. The bandages should be changed again in the evening and legs given a good, hard rubbing."

"As to blanketing," one horseman writes, "the guy at the wheel is supposed to know when to blanket. I always put on a blanket and hood on cold, windy days. Never allow a direct draft to hit the colt when he is in a heated condition."

We have now given the essential features of speed work. The subject might be extended indefinitely, but further details would make our remarks too cumbersome. As Charles Valentine very expressively set forth: "This thing of being able to find out in a book how to break, shoe, train and feed a colt is all a frost. As you know, you can't handle all colts alike. The first thing owners should do with a colt ready for speed development is to send it to a first class trainer."

The man who wants to win a futurity, and who can afford it, should either hire a good trainer, or send his colt to one. But if an owner cannot afford this, or if he is one who owns colts for the pleasure of training them himself, he must carefully study what others have done and apply the knowledge gained to his own colts to the best

of his ability. He must never do anything with a colt unless he knows why he is doing it.

One of our collaborators suggests that this chapter include a short story of the methods of training some of the famous yearlings of both the present and past. We are glad to accept this suggestion, and find our work lessened by reference to Roland Drake's article in the 1912 Christmas number of "The Horseman."

Airdale, 1, 2:15¾, the world's champion yearling trotter, was foaled in April, 1911. Before he was weaned he had learned to eat grain and was halter-broken. In October, 1911, he was broken to harness, and after twelve hitchings or less was turned out for the winter. He was in training (at Lexington, Ky.) where this could be done. Incidentally, without any effort to "search" the colt, he stepped an eighth in 25 seconds. About March 1, 1912, Airdale was taken up and shod and jogged on the road for a month; then sent to the track for training. He was brushed every other good day, for a short distance, to make speed. On June 25 he was driven a half in 1:12¾ and a quarter in :35, and turned out for a month. After his short vacation he was taken up, and after another month's training was driven his first full mile in 2:50, about Aug. 25. In the next two weeks he was given three miles better than 2:40, the fastest in 2:28½. In the meantime, he had been a half in 1:07¾ and a quarter

in 33 seconds. On September 18 he was started for a record, and trotted in 2:20. A few days later he trotted in 2:41, then 2:27. On Sept. 30 he was driven a mile in 2:21¾, last half in 1:06¾, last quarter in :32¼. The next day he was given slow jog work, and the following day (Oct. 2) started publicly to beat 2:20, and trotted a mile in 2:15¾, breaking all yearling trotting records. This was the last of his fast work for the year. He was kept up and jogged for a while and let down gradually. Airdale was broken as a weanling and trained and driven as a yearling by Hunter C. Moody, who uses the system explained above on almost all of the colts he trains. He does not favor leading colts beside of, or ahead of, a pony.

Peter Volo, 1, 2:19, that was the champion yearling trotter for about six weeks, and second only to Airdale, was foaled April 25, 1911. He was weaned about October 1, and halter broken and led beside a pony. The usual custom at the farm where he was foaled is for colts to be ground broken shortly after January 1, but not hitched in shafts until about March 1, when they are driven through the fields barefooted. But in the case of Peter Volo it was expected to sell him at auction in May, so he was not ground broken, but trained beside a pony in the spring. He went to the sale, but was bid in and returned to the farm. He was hitched to a cart for the first time

about May 15. He was practically broken the first time he was hitched. The third time in harness he was hooked to a bike cart and trotted a quarter in 40 seconds. Before long he trotted a quarter in 36 seconds. Note that he was broken to drive about seven months after Airdale, but soon stepped a faster quarter than Airdale had trotted at the same time. About July 1 Peter Volo was driven a mile in 2:33. In two weeks he trotted in 2:26½, and a few days later in 2:23½. On August 16 he was started to beat 2:30¼, and trotted in 2:19, lowering the world's yearling record, held by Miss Stokes, by one-quarter of a second. Later he was driven a half in 1:06, with the last quarter in 31½ seconds. Peter Volo was trained and driven by Ed Willis, who was also responsible for Miss Stokes.

Hester C., 2:21½, was foaled in the spring of 1911. She was weaned and halter broken in the fall, then harnessed and driven ahead of a pony, not to make speed, but to teach her how to behave in harness; then she was turned out, without being hitched, shod or booted. About April 1, 1912, she was hitched to a cart and jogged without shoes until ready for speed work. She was given full miles in training, not driven any extremely fast quarters or halves, as her trainer (Henry Williams) believed they take too much out of a colt. She took her record at Lexington on October 11, 1912.

Wickliffe Curry, who has given records to more yearlings than anyone except Moody, halter breaks as soon as colts are weaned, then has them shod and leads them beside a pony. He boots his colts for protection. After being led a few times, he ground-breaks them, and later on, during the winter months, they are hitched and broken to drive. The speed making comes in the spring. Stewart Chandler handles his colts in much the same way as Curry.

Previous to Peter Volo, the champion yearling trotter was Miss Stokes, 1, 2:19¼, that was trained by Ed Willis in his usual manner, as previously outlined.

Previous to Peter Volo, the champion yearling trotting stallion, was Wilbur Lou 2:19½, developed by the late Frank H. Holloway, of Hemet Stock Farm, Hemet, Calif. Wilbur Lou was weaned and halter-broken in the month of December, 1909. When he was nicely halter-broken, he was bitted and ground broken for about a month. He was then hitched and driven a few times, and then turned out. On the 20th of April he was taken up again and driven for several days before being shod with 6 oz. half round shoes in front, and 4 oz. plain shoes behind. The next day he stepped an eighth in :30½, two days later in :28½, and two weeks later in :22½ seconds. Up to this time he had not been asked to go further than an eighth of a mile, and in

working was not turned around, but kept on going the same way of the track. For the next two weeks, he was repeated quarters every other day. He made speed so fast that through the month of June he was worked only once a week. The 25th of June he trotted a quarter in 39½ seconds, with an eighth in 18 seconds. He was not worked again until the 6th of July, and on through that month was brushed quarters twice a week. July 29th he trotted a quarter in 36½, an eighth in 17¼. August 1st he was worked his first mile in 2:55, last quarter in 39 seconds. August 5th, 2:45; August 9th, 2:42½, last quarter in 36¾; August 12th, 2:37½, last quarter in 36. On August 16th he was brushed quarters, one in 35¼, and one-eighth in 17¼; August 20th, mile in 2:50; August 25th, mile in 2:40½; Sept. 1st, mile in 2:30½; Sept. 8th, mile in 2:28½; Sept. 12th, 2:45; Sept. 16th, mile 2:33½; Sept. 19th, mile 2:27¾, last quarter in :36. All this work was over the farm half mile track. The last mile was 6½ seconds faster than the world's half-mile-track yearling trotting record made the same year by Benear. This concluded his work at home, as he was shipped to Phoenix, Arizona, where he got his record. His first workout on a mile track was in 2:24½. A few days later, on Nov. 8th, he trotted a public mile in 2:23, equaling Adbell's record. Three days later he trotted in 2:19½, with the quarters in :34¾,

:34¾, :36 and :35. The same system was used on Harry R. (1) 2:24½ and Hemet, p., (3) 2:08¼.

Previous to Miss Stokes, the world's champion yearling was Adbell, 2:23, that took his record at San Jose, Calif., Sept. 27, 1894, driven by Walter Maben, although his speed was developed by John S. Phippen. We know little about the method in which his speed was made. His first start was on Aug. 17, when he won a dash on a bad day and on a slow track in 2:28, a new record for a yearling colt in a race. On Aug. 27, in another dash, he won in 2:26, further reducing the yearling race record, and also the yearling stallion record of Athadon, 2:27. On Sept. 27 he trotted a mile against time in 2:23, quarters in :36, :36, :35¾, :35¼.

Previous to Adbell, the champion yearling trotting stallions were Athadon, 2:27, driven by Matt Dwyer at Stockton, Calif., Nov. 28, 1891, and Freedom, 2:29¾, driven by John A. Goldsmith at Napa, Calif., Oct. 18, 1890.

Previous to Adbell, the champion yearling trotters, without regard to sex, were: Pansy McGregor, 2:23¾, driven by O. M. Keets at Horton, Kas., Nov. 18, 1893; Frou Frou, 2:25¼, driven by Millard Sanders, at Stockton, Calif., Nov. 28, 1891; Bell Bird, 2:26¼, driven by Charles Marvin, at Stockton, Calif., Oct. 21,

1891; then Freedom, 2:29¾, already mentioned, the first yearling to trot in 2:30.

Charles Marvin, the great colt trainer of his day, drove three yearling champions to their records: Hinda Rose, 2:36½ (1881), Norlaine, 2:31½ (1887) and Bell Bird, 2:26¼ (1891).

We quote from Marvin's book, which describes the training of Norlaine. With less than a month's preparation, she reduced the world's record for her age 4¼ seconds:

"From the day that Hinda Rose made her record of 2:36½ in 1881 there was no yearling produced in America to threaten that record until the season of 1887, and as long as it was not menaced we made no effort to improve it. But a surprise came from Kentucky in the year last mentioned, when the deeds of Sudie D. made her famous. * * * George Bowerman started her at Lexington, October 15th, and she went the mile in 2:35¾. When the news arrived that the Palo Alto yearling record had been eclipsed we at once set to work to bring the honor back. The time was short, and we had to pick a good one of our youngsters and push development at high pressure. The most forward of our yearlings was the filly Norlaine, by Norval (present record 2:17½), out of Elaine, 2:20—the fast mare by Messenger Duroc, out of Green Mountain Maid, whose history I have already given. She was a rather dull brown in color, a trifle pony-built in some respects, but with a long, low-set body, short sloping hip of the pacing formation, and low at the withers. Her legs and feet were of the best quality, and she had a level head. Norlaine was not impressive in appearance until you saw her go. She was always fast from her first lesson on the miniature track, and I began working her in April, but gave her only the easiest of work, as the intention was not to start her until she was two years old. But Sudie D.'s brilliant performance in October changed all this,

and I then began training the filly in earnest, working her twice a day. In doing this, of course, I took chances of injuring her, and, indeed, of breaking her down. Had we begun earlier she could have been given more work, and could have been developed to a higher point, with little or no risk, but we never allow such considerations to stand in the way when the supremacy of Palo Alto in colt records is at stake. The filly took her hard work with relish, and improved under it until November 12th, when we felt that she was equal to the task of plucking the fresh laurels from Sudie D.'s brow. The trial was made at the Bay District track, San Francisco, and she trotted the mile in 2:31½, a yearling record that has a good chance to last as long as Hinda Rose's. The time by quarters was :39, :36, :38, :38½."

We will quote also from Marvin's description of Hinda Rose's training:

"Hinda Rosa was our first youngster that earned fame at the early period of yearling form. She was foaled February 22, 1880, and is a brown mare, by Electioneer, out of Beautiful Bells, 2:29½. * * * She was well broken early, and in her yearling form I began working her. Her serious training began July 5, 1881; I had now gotten well into the Palo Alto system of training, and could work the new fangled ideas pretty skillfully. She was worked on the method described in chapters further on, until November 5th, the date of her first public performance. The yearling record was then 2:56¾, and at the Bay District Track a set of harness was offered to yearlings to trot against this record. The first trial was made by the filly Pride, by Buccaneer, owned by Count Valensin, and driven by John Goldsmith, who has since handled Guy Wilkes, Sable Wilkes and other horses so successfully for Mr. Corbitt. Pride made the mile in 2:44½. I then drove Hinda Rose and she went from wire to wire in 2:43½. On the 24th we gave her another trail, when she went in 2:36½, and this stood as the yearling record until 1888, when it was lowered successfully by the Kentucky filly, Sudie D., and our lost Palo Alto star, Norlaine."

(Note.—The reader will note a reference to the training paddock system used at Palo Alto Farm. This was an improvement over the ordinary paddock. Corners were rounded off, so that when colts were chased around they would not trot up into a corner and stop. Later two covered tracks were constructed, one 313 feet in circumference, the other 506 feet around. After the colts were thoroughly halter broken they were turned into these tracks and chased about to develop their speed. The Palo Alto miniature track system had quite a vogue, as did the other old-time plan of hitching a colt by the side of a runner, but both methods have practically gone out of use.)

Edna the Great, 2:29¼, former champion yearling trotter on a half-mile track, was trained and driven by Dr. W. A. Barber, a dentist of Springfield, Ohio, who finds recreation in horses. The following is his own story:

"Edna proved to be a bear-cat to subdue, being unbroken when I bought her early in her yearling form. We found it necessary to pad her stall with baled straw, in order that she would not do injury to herself in her attempts to get away from her tormentors. Halter breaking and bitting required all of April and a portion of May before we hitched her. She was a broncho when we hitched her. The brush system was not used, as she had all the speed on tap that was necessary. She was low in flesh and gentle exercise was all that we aimed to give her for the next few weeks. She was hitched daily for a couple of weeks at a time, then a run in the paddock for a few days and she began to take on flesh. With an abundance of feed, plenty of grass and a tonic to tone up her system, we started in to give her a mile every morning, very slow at first, with a brush home, gradually increasing the distance that she was stepped at speed until we were going a pretty fair quarter in almost every workout, keeping always in mind not to ask her for more than she could do well within herself, never at any time did I carry her to the extreme limit of her effort, or to the point of exhaustion. The chief thing in the training of Edna the Great was to be able to say 'whoa' often enough, as she had ambition enough to try to beat any horse on the track. It was not very long before she began to go miles. A mile around three minutes seemed a romp for her, and she was given a mile

every morning that we had favorable weather conditions, with a brush at the end of the mile. A little later in her work we began to take her down to the eighth pole at a good, stiff clip, then ease her up to within a short distance of the wire and let her step a short distance at the end of the mile.

"She was worked very early in the morning in order that she would have a light rub and then walked through the dewy grass and allowed to have a good lunch of grass; and made an effort to have her legs well bathed in the cool dew each morning when it was at all possible. She never had a bandage on, and her legs or her general physical condition would not indicate that she had ever worn harness.

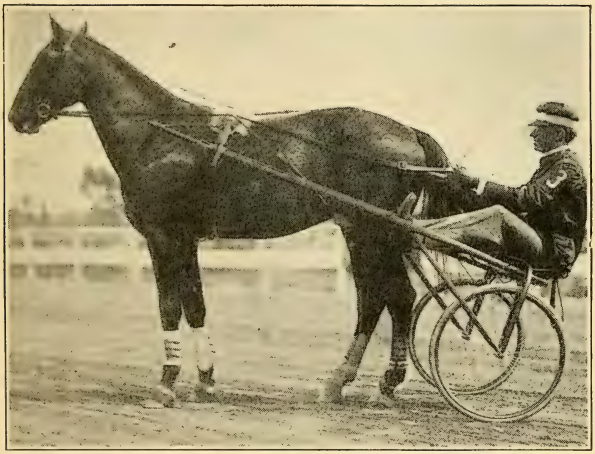
"She was gradually dropped down in her work to the 2:40 mark and beat that notch upon two occasions prior to her record mile. One mile was in 2:33½, with the last half in 1:10. On the 29th day of August, at the Columbus, O., State Fair Grounds, upon a track that was exceedingly slow due to rainy weather, she was sent against the record of 2:34½ made by Benear at Goshen, N. Y., with the result well known to all that love the American trotter.

"Her shoeing and rigging was of the simplest kind; in front she wore a 4¼-oz. shoe, no toe weight at any time, with a short toe, and behind she wore a shoe as light as could be made to afford sufficient protection to her feet.

"Her harness was plain, breast collar, blind bridle with a nose band attached to a standing martingale, and carried her head level with her body. Her boots were the lightest that I could procure and she never showed any marks on them."

The present champion yearling trotter over a half-mile track is U. Forbes. Despite a sticky track and high wind he trotted a mile in 2:21½, driven by Hunter C. Moody, at Louisville, Ky., September 17, 1913. The colt was sent away slow, first eighth in :19¾. The next eighth was in 17 seconds, making the quarter in :36¾. The

next quarter was in :33¼ (a 2:13 gait), making the half in 1:10. The next quarter was in :35½ and home in :36.



Peter Volo, 2:04½ (in 1913). World's Champion Two-year-old Trotter.

Chapter IV—Shoeing Colts.

By Dr. Jack Seiter.

HEN shoeing a colt I have found that a study of the gait of its parents, when possible, is of great assistance, for, in correcting a fault, it is well to know whether it is individual or hereditary. And before going into the subject of this chapter I wish to register a note of warning as regards heredity of gait. How often have I seen a breeder attempt to produce a colt of good conformation, by crossing a horse of excellent structure (one with which the most exacting judge of horse flesh could find no fault) with a spindle-legged, knee-knocking mare, simply because she was well bred, or had considerable speed. Naturally he figured that the stallion would predominate in this union, and the colt would be of the desired conformation. I have seen this mistake made year after year. The influence of heredity (for bad as well as good) can not be better illustrated. The result is usually a leaning toward the bad; the colt is almost always an animal of faulty conformation in one or more points. Naturally this condition will also exist if we reverse the order of things, and cross an ill structured stallion with a perfectly developed

mare. The bad will almost always crop out in preference to the good. If more attention were paid to the conformation of both the sire and the dam, we would not be obliged to cope with the large number of misfit animals that are raced today. It is not uncommon to hear some of our best horsemen make the remark, that "such a colt has license to be very fast, but he hits his knees, he toes out with one foot," or some other malformation handicaps him from being a world beater. After several years of training, during which time the horse shoers and the boot makers derive enough money out of him to buy a good animal, the colt is given up as a bad racing prospect. If a filly, she is retired to the broodmare ranks, to produce more of the same type; if a stallion, to do stud service, to fill the country with more trouble makers of the sort that drive prospective owners out of the game. But this thing has been going on for ages, and the chances are that it will continue as long as the breeders insist on breeding their "pets," regardless of conformation, expecting to get perfectly developed animals, that will do to race and to fix a type of race horse. Many prominent stallions, standing at high fees, have been handicapped because wealthy horsemen would insist on breeding their worn-out favorite road mares to the stallion then in the lime-light—Axtell and Bingen are recalled as two examples and there are many more.

First Trip to the Blacksmith.

When the colt arrives at the age of two months its feet should be examined carefully. If dressing is needed feet should be attended to at this time. Just as a human baby becomes bow-legged, the colt is liable to be foaled with, or acquire, a faulty conformation. If the toes are excessively long, they must be shortened; if the heels are abnormally high, they must be cut down; and if the foot shows more growth on one side than the other, the high side should be trimmed down far enough so that the lower side will also receive its share of the weight and bearing. If the colt shows the slightest inclination of being deformed, knock-kneed, or toes out, we must dress down the outside of the hoof, especially the outside toe, and it is also advisable, in cases of this kind, to rasp off the edges of the wall at the outer toe, enough to reduce it to the same thickness as the inner one. By following these instructions, at least once a month, one can work wonders with a foot of this type. Under no consideration should one apply a knife to the sole, bars or frog of the foot. Excessive cleaning out of the feet is not advisable, either; naturally we must look after the cleanliness of the feet, but, unless there are positive signs of thrush, one must not go to extremes, such as the free use of the foot pick, which is often the cause of forcing filth into the cleft of the frog and the bars, whereas, if the parts are left

intact and filled up with the natural growth of horn that nature provided, it will become almost impossible for the seat of the trouble to become infected. In case of thrush one must not go to extremes in an endeavor to cure it, and cut away the bars and frog. One must try and save all of the frog that is not infected, consequently only the ragged edges should be removed, for, by carving out the healthy portions of the frog or bars, we only invite future trouble, in the form of contraction. In the majority of cases the knife is entirely unnecessary, but a good washing out with warm water, to which a good antiseptic solution has been added, will remove the trouble. After this, the foot must be thoroughly dried, generally it will dry out naturally in a few minutes. Then the parts involved, the cleft of the frog and surrounding bars, must be packed with some good antiseptic powder; it is a good plan to force some cotton or oakum into the crevices to hold the powder in place. Several treatments of this kind generally suffice to cure the most stubborn case of thrush. But, as in all other afflictions that horse flesh falls heir to, an ounce of prevention is worth a pound of cure.

Care in Dressing Hind Feet.

In dressing the hind feet, it is, as a rule, advisable to keep the toes short and well rounded off, but the conformation must never be lost sight of. If there is the slightest sign of curby hocks, we

can not cut the toes too short, nor keep the heels too high, and where there is a strong predisposition to this unsoundness, early shoeing is strongly recommended, the shoe to be square toed and set back from the toe, the heels of the shoe to be of a good length and a heel calk turned up on them.

Now, the above are simple rules, so simple, in fact, that they are known alike by the humble stable boy and the prosperous owner, but we often overlook small details; consequently, the oftener we are reminded of them, the more apt we will be to remember them. If we overlook the most minute detail, which goes to build up the animal, we will have a weakness somewhere, and the chain is as strong as its weakest link only.

With the above precautions and attentions ever before us, we will have the proper sort of a foot to work on, when the time arrives for the first shoeing. The first shoes should be applied for protection only, consequently they must be as light and thin as possible, and the nail holes as few as possible, and punched toward the toe, to allow for the natural expansion of the foot. The foot must be leveled with the rasp only, no knife should be allowed to mutilate the sole, the bars, or the frog; if we leave these structures intact, and apply a thin shoe, we do not rob the frog of its function, that of acting as a cushion, not only to the foot, but to the limb as well. The frog is

the one thing that we can depend upon to keep the foot in its natural elastic state, the sole and bars depend upon the frog to furnish them with moisture, and they in turn, when pliable, protect the structures that are above them. If the frog and bars are left intact, as nature intended they should be, we will not be troubled with contraction, and its sequels, such as corns and quarter cracks. The frog takes care of the entire foot, there is no substitute, that man has discovered as yet, that will take the place of the good, healthy, unmutilated frog as a moisture secreting organ, and never under any conditions, should it be cut into. It is permissible to trim off the ragged edges, and rightly, too, but there are few, indeed, who can resist the temptation to cut off just a little more than is necessary—the idea being to give the frog a symmetrical appearance—to make it take on the appearance of some of the pictures we occasionally see labeled—a natural foot. The fact of the matter is, that a natural foot, untouched by the hand of man, or his misery producing tools, is about as unsymmetrical a piece of handiwork as the Creator ever endowed an animal with, yet we attempt to make a model shaped organ out of this crude appearing mass of sensitive and insensitive tissue. It is not desirable to interfere with the growth of the foot at all, outside of shortening the wall sufficiently to enable us to get a good level bearing for the shoe. The frog, bars

and sole should not be touched; the more sole we leave, the less danger of bruises and corns we will have to contend with; the more frog bearing we can obtain, the less jar and concussion the foot and limb are subject to, and the less corns and quarter cracks we are liable to have and we preserve the natural moisture. This evaporates the moment we apply a knife and open the cells or pores.

Hard Frog Unnatural.

An animal will go lame if it steps on a pebble or a rock, especially if the sole, bars and frog have been excessively pared out. A frog that has been trimmed to the extent of robbing it of its natural function and trimmed so it is forever kept off of the ground, will dry up and become as hard as a piece of stone. Most horsemen will admit that a stone will bruise a foot, but it is difficult for some to realize that a dried-up frog is just as hard as a stone. The fact of the matter is, they both do the same damage to the foot, with this slight difference, the stone acts on the sole only, whereas the hard frog acts on the sensitive structures that underly it, the fatty frog, the preforans tendon, where it runs over the navicular bone to find its attachment on the semi-lunar ridge of the coffin bone and above this the nacivular bone. Can the frog protect those parts when it is robbed of the power to do so? Well hardly.

"No foot, no horse," "no frog, no foot," are two true sayings, consequently we must consider the frog to be a link in the chain in order to have a perfect working animal, all parts must work in unison; if only one and the most insignificant structure is out of order, we are in trouble. The chain has a weak link, consequently it matters not how powerful, speedy or game an animal is, when the crucial test arrives, the entire structure will be found to be no stronger than its weakest organ.

We hate to be told the truth. We do not like to have the little things that go to build up the large ones drilled into us, and the majority of horsemen, upon reading the above, will say: We know that much ourselves. Certainly you do—but it's the things that we know the most about, that we grow careless of; we are too anxious to learn something new, consequently forget the old and fundamental principles of our work. For instance, if a horse becomes lame, it matters not where, we look for something to cure the lameness, a hot iron, or a liniment that may be still hotter. We do not understand the action of them, but they are the things we invariably go after; instead of looking after the little things, things we understand, things that are the direct cause of our troubles, and if any one should endeavor to explain them to us, we would exclaim, "Why, I know that much myself." Certainly you

do, but why don't you use your knowledge before you are in trouble?

Changes in Colt's Gait.

The changes that take place in a colt's gait, after being shod, are due, to a great extent, to the abnormal changes that the structure of the foot often has to undergo, changes that are not due to the ignorance of the persons in charge so much as to the carelessless. In a natural foot, the sole is perfectly flat, the frog, the bars and the sole all have an equal bearing upon the ground. If we take off just enough of the wall to get a level bearing surface for the shoe, and then apply a thin strip of steel, the thickness not to exceed the amount of wall we have taken off, we will shoe according to nature, or as near as possible to nature; of course it is to be understood that the bars, sole and frog are left intact. But here is the general procedure: the sole is carved out, the bars are also cut out, and the frog is cut away and shaped up, then a shoe is applied that is usually from a quarter to a half inch thick. The moment this shoe is applied, the sole, frog and bars are robbed of their functions as weight carriers and concussion destroyers, they dry out and become atrophied, and as hard as a stone. The colt is worked, and goes well for the time being, but after a few weeks he shows signs of going rather short gaited, does not extend himself as he should, or as he did when first shod. Again he is

taken to the shop; we all know what the orders will be, do not take a thing off his feet, and apply a still heavier—and naturally thicker—shoe in an effort to improve the action. In this manner the frog and sole are still further elevated from the ground which nature intended it should come in contact with at every step. After this change, we have, following in rapid succession, the dropping in of the quarters, contraction of the feet, followed by corns and quarter cracks, and, also, the foundation is laid for that dreaded of all foot troubles, navicular disease. When the hard, atrophied frog comes in contact with a stone or a rock, and the sensitive structures that it is supposed to protect, with its rubber-like elasticity, are bruised, then there will loom up in the near future, a bloodshot sole, a bruised tendon or navicular disease.

A Natural Dressed Foot.

When the foot is dressed in the proper manner, and, after it is shod, receives the proper attention and care—it is just as essential, or more so, to keep the feet of a colt soft and pliable, as it is to bestow that care on a race horse—it will be found that not one-half of the weight usually applied is necessary to balance a colt. Now this may seem a broad statement to make, but it is a fact, as I have discovered during twenty years' work with light harness horses, and considerable of that time was spent shoeing colts and taking care of their feet,

on some of the most prominent stock farms in the country, and farms are the ideal school for any one interested in this work. No, what I say is not theory, but fact, as the average horseman or horseshoer is well aware. They all know better, but they often overlook the small details, looking for the larger ones. Instead of getting at the seat of the trouble, the cause as it were, and removing it, they entirely overlook it in their endeavor to correct gait with new-fangled shoes, toe weights, pads, bits, straps, and the like.

REPLYING TO AN INQUIRY.

Dear Sir: In a recent issue of The Horseman your advice on colt shoeing was to let the frog, sole and bars have ground bearing, so they would perform their natural duties and retain a healthy condition. Now we find cases where such would be impossible and what I wish to know is this, if the wall, sole, frog, and bars were rasped perfectly flat and a perfectly flat disk of steel, shoe shape, was nailed on, would bad results follow from concussion on sole, bars, or frog, or all three? In case of open heeled shoeing should pressure be allowed between sole and shoe inside of lamni? I ask this because our shoer forbids the least sole pressure and another says without it, the wall will be split loose from the foot.—L. E., Calif.

The horse in its natural state has an equal amount of frog, bar and sole bearing along with the wall bearing, and in nine cases out of ten the average race horse, after wearing his shoes for several weeks, will be found to have the same bearing distributed over the entire surface of the hoof, especially is this the case when the shoe is made of very thin material and devoid of calks. Cases are rare, indeed, where the sole does not grow down after a few weeks of shoeing, so that it is perfectly even with the wall, and shoe, it matters not how much of an effort we may make to prevent or avoid this condition by excessive paring out the sole, the bars and the frog.

It is not good policy to attempt to rasp the wall, sole and frog perfectly flat; but it is good practice to rasp the sole, wall and bars level, but in all cases we must strive to preserve the frog, every particle of it. It matters not how much frog pressure we obtain, the more the better. This idea, or rather notion, that we save the sole and frog from concussion by cutting them away so that they cannot

come in contact with the ground is all nonsense, pure and simple.

If an animal were not supposed to have frog and sole pressure, why is it almost the universal rule of all of our foremost drivers and horsemen to invariably shoe with a leather pad under the shoe and then pack the space between the sole of the foot and the pad with hoof ointment and then lay several layers of oakum upon it? This is generally packed in as snug as possible. Do they not do this to avoid concussion by distributing the blow of the foot, as it hits the ground, over the entire sole surface? Certainly they do, otherwise what would be the use of the pad and packing? Would it not be just as well to carve out the frog, sole and bars and then not use the leather and packing? It may do, to the theory of some, but if there were any merit in this procedure, why do not the leading horsemen shoe in this manner?

The old-time trotting horse men, and shoers, too, can vouch for the fact that the old-timers were more in favor of paring out the soles of their horses feet, in fact a farrier's reputation depended to quite an extent upon his ability to do a nice job of paring. By this is meant to see how much of the frog, sole and bars he really could cut out without drawing blood. But history tells us that the old-time racer invariably had foot trouble of some sort or other, generally corns, quarter cracks and toe cracks were common, and contraction and its subsequent sequel, the dreaded navicular disease. There is no denying the fact that excessive paring of the sole ultimately hastens the above named foot diseases.

If our colts had their feet dressed in the proper manner from colthood up and were shod according to nature, the entire structure would be pliable, as nature intended it should be, without artificial hoof packings and oils, and as it is when untouched by the hand of man.

No one ever saw a hard frog or sole in the foot of an animal that had plenty of frog and sole pressure. The action of the frog supplies the needed expansion to the hoof at every step and this action necessarily keeps the bars and sole in constant activity and consequently pliable and resistant to concussion.

In all the schools for farriers, especially those of the foreign countries (and there is no denying the fact that they are far advanced and pay more attention to the foot of the horse than we do, as a general rule) students are

taught to dress the foot with a rasp only. In our own army the rules say, you must not, under any consideration, touch the sole, the frog, or the bars of the feet with a knife. In the veterinary colleges (very few, I am sorry to state, make any pretense of giving this all important structure its due share of study) they also teach us that by applying a knife to the sole, bars and frog of the foot we rob it of its natural function and elasticity and its natural moisture secreting qualities.

If a foot is dressed perfectly flat and the frog and bars are left in their natural state, the chances for concussion are remote indeed. The foot lands upon the heels. The frog, if in its natural state, breaks the concussion. There is no further chance for concussion after the foot comes in contact with the ground, for after it strikes the ground on the heels and frog the rest of the movement is simply a continuation of a roll until the foot again leaves the ground.

Years ago, especially in the old countries, the Charlier shoe (named, no doubt, after its inventor), or more often a "tip" after the same pattern, was widely used. It was made out of very narrow material and instead of being nailed upon the wall of the foot, as is the custom now in vogue, there was a groove cut out of the wall extending in and up for about three-eighths of an inch, depending upon the size and strength of the wall, and into this groove was fitted the shoe, or plate. When the job was completed the sole, frog and bars were left intact, in identically the same manner as though the animal were bare-footed, the function of the shoe being merely to prevent breakage of the wall.

This shoe was and is successfully used on hunters and jumpers. Our trotters have only their own weight to carry and the concussion naturally depends greatly upon the action of the animal. But when we take a hunter and put a hundred and fifty pounds, or more, upon his back and then ask him to take a four or five-foot fence, it can readily be seen that the possibilities for concussion are greatly magnified, yet we hardly ever hear of one of this kind being laid up on account of bruised feet.

In England they have races for ponies that stand fourteen hands high. In order not to exceed this heighth it is often necessary to go to extremes in dressing the feet, the wall, at times, being rasped considerably lower than the sole, and then the thinnest possible piece of steel is

applied, often the Charlier shoe or "tip" being used. I have it from reliable information that invariably the feet of these ponies that undergo this shortening process are the best and are free from corns, bruises and quarter cracks.

I know of a large teaming stable in Chicago, the owner of which is a graduate veterinarian, and he tells me that the best feet on many of his horses are those that occasionally lose a shoe while on the road, his orders to the drivers being, drive to the nearest shop and have an old flat shoe tacked on to the foot, and do not allow the smith to dress the foot in any way. Especially is the use of the knife forbidden. Those horses travel over the rock paved streets on their frogs, bars and soles, they do not go lame or sore, simply because those parts are left intact and able to perform their duty as nature intended they should.

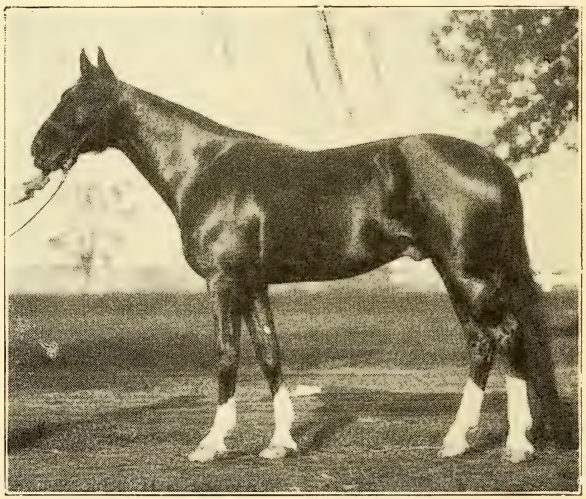
Of what use is a pad under a light shoe? Some say a pad covering the foot and packed with oakum only adds to the concussion of the sole. Others say it breaks concussion, so there you are. I believe that outside of holding moisture to keep the sole of the foot soft that pads are, in most cases, unnecessary. If the foot were dressed as it ought to be from the beginning, and the sole, frog and bars left intact, the use of pads, especially the full pad, could be dispensed with. The structures named would secrete sufficient moisture naturally, that is if they are permitted to fulfill their function as weight carriers and concussion destroyers. I believe that where a pad is indicated, on account of the track being extremely hard, the rim pad of very thin leather will answer the purpose very well. The animal would get along better yet if we left just a trifle more sole and wall. There is just about as much elasticity in the natural sole and wall as we could expect to find in the average leather pad.

To sum up; I believe, in fact I know from experience, that if we dress the foot of the colt in this manner and keep the wall dressed down at regular intervals, and then follow the same principle when we shoe him, we will have considerably less of the common ailments that the foot falls heir to.

On the other hand, I would not advise taking an animal, especially an aged one, that has had its frog, bars and sole trimmed out until they were thin enough to give under the pressure of the thumb, and where the frog is dried up and shrunk out of all semblance of a natural frog, and the foot

is contracted and hard, and attempt to drop this sort of a sole and frog upon the ground, certainly it would not be advisable unless the feet were well softened first, and horse then turned out into some place where the footing was soft. When a condition as this presents itself, it is best to dress the foot down in gradual stages.

I never heard of a case where sole pressure lamed an animal, nor have I ever heard of a wall splitting loose from the foot for the want of sole pressure. Of course there are exceptions to all cases, but generally when we find rare cases of this sort there may have been a hundred and one different causes that have brought them on, causes that probably seem too insignificant for the average horseman, or horseshoer, to notice in their incipiency.



Colorado E., 2:04¾ (in 1910), World's Champion Three-year-old Trotter.

Chapter V—Preparing for Two-year-old Futurities.

E HAVE written of the care and training of the colt from the day it is foaled till the time when it is desired to "make speed." We assumed that the speed-making was to be done in the colt's yearling form—we have even shown how colts are worked for yearling records. If it is not desired to make speed in a yearling, this part of the colt's education may be postponed a year or two, at the owner's option, but even if colt is not to be raced until its aged form it is desirable to "make speed" while it is young and impressionable, for the colt will be easier to train later. This chapter is to be devoted to preparing two-year-olds for the futurities. By this we do not mean to advise that all two-year-olds be prepared with that purpose in view, but in case it is desired to train a two-year-old this chapter will be found to contain valuable hints from noted trainers.

In many cases the two-year-old that is to be trained for the futurities will have been running out during the winter, especially in southern climates. Some trainers, of whom J. B. Chandler is one, do not believe that colts that are to be trained for the two-year-old futurities should be turned

out at all, but should be kept up all winter, and carefully fed, perhaps jogged a little, and occasionally turned out in a paddock. Even if turned out in the fall, it is advisable to take the colt up early (some advise January 1) so that it will become well-muscled and hardened in flesh before the spring speed-work commences.

Almost every trainer has a different way of working colts, some give no jog work at all (only brushing), some jog a great deal, and others combine or alternate jogging and brushing. We will illustrate the various methods by citing specific cases.

One prominent horseman, who usually trains in the South and who is too modest to allow the use of his name, writes: "We begin as early as possible and jog and brush our two-year-olds, beginning with two mile jogs which include two or three brushes of ⅛ mile. These jogs are gradually increased in length and speed until we are jogging four miles and brushing quarters. Then we begin working miles around 3:30 three times a week, dropping down two seconds a week until we are going miles in 2:40, when we begin repeating. Now we work miles in 3:00 and another one in the same time. We gradually reduce the time of both miles according to how the colts progress. We do not work three heat repeats until about two weeks before we expect to race, and not at all if we do not expect to start."

J. B. Chandler writes: "I do not believe in jog work for two-year-olds. I only brush my colts. When the colt gets so he can brush a quarter in 32 seconds then I commence working miles. I believe in working colts in training a little every good day. I start in miles about as fast as the colt can go without tiring and let the colt drop himself down at successive workouts as he learns to trot. When you have speed enough (a man will have to judge for himself) you can commence working two-heat repeats. I do not believe in three-heat repeats for two-year-olds."

Amos Whiteley writes: "It is my opinion that two-year-olds should never be prepared for futurities of that age. We bring our two-year-olds along, commencing with them about the 1st of April of their two-year-old form, and go right along mannering and jogging them for the first thirty days; then we commence making speed with them for short distances, say a sixteenth to an eighth of a mile, and keep brushing them for about sixty days. We never give them any full miles where they can step, but we do brush them quarters, give them slow miles, stepping them the last quarter. What we want is good three-year-olds, four-year-olds, and five-year-olds, and we do not approve of over-developing them as two-year-olds."

Dr. W. A. Barber writes: "I believe in starting early with a two-year-old, say January 1, so as to

harden it up for the brush work later. I believe in jogging every good day, but as to how much of it, that depends on the colt. Many colts take as much work as an aged horse and thrive on it. I begin working heats as soon as weather and track get good in the spring. I work every other day, at first, if colt is strong, starting in with miles from 3:30 to 3:50 and drop down very gradually. I begin giving slow repeats within 40 days after working a full mile, the first one very slow, the second one the same to past the three-quarters, with a brush home. I never give three-heat repeats until within a few weeks of first engagement."

James Benyon writes: "All the colts I have been connected with were worked a little in the fall as a yearling and jogged all winter. In my opinion, a colt should be taken up in its two-year-old form as soon as possible. A colt has everything to learn and the more chance you get to school him or her, the more it is bound to learn. The colt should be jogged every day that is favorable. I never jog a two-year-old over three miles and the next day after working one I usually jog only two miles. We start working them one heat, every other day, from the middle of March, when the weather permits. How fast the colt should be worked at first depends entirely on how fast the colt is. We usually go very slow miles and step the last eighth or quarter near its limit, say miles around 3:00

to 3:30 to start on. I would drop a colt from 3:00 in the latter part of March to 2:30 by the first of May. Commence to repeat colt when you cut down to 2:30, that is by fore part of May. When we start repeating we usually go the first heat in 2:40 to 2:45 and second heat in 2:30 to 2:35. About dropping one down, I can give you my idea from Sweet Alice's work as a two-year-old. She worked in 2:30 about May 10th, went from there to 2:25 by June 5th. Was working her three heat repeats by May 20th. Two heats the forepart of week and three the latter part, altogether five heats a week. She went in 2:22 by June 20th, going seven heats a week then, three first of week and four latter part. During Grand Rapids meet she worked in 2:19, at Kalamazoo two heats the same day in 2:19½ and 2:19, at Detroit two miles in 2:17½ and 2:17, at Cleveland two miles in 2:18 and 2:16¼. Then went to the post the next week at Pittsburgh. This is about all I can tell about working colts. You can seldom work any two colts alike because you seldom see two of the same kind, some want more work and some don't need as much. Some want to be brushed a lot and others need very little brushing."

Ed F. Geers writes: "Two-year-old colts should be taken up in February, if possible, and jogged two or three miles every day, except Sunday. After the colt is seasoned he should be brushed a little every other day at three-quarter speed.

After working him a month or six weeks that way, he could go an easy mile, twice a week, letting him move a little strong at the finish. Along in June, after having several of these easy miles, he might be repeated, well within himself, finishing a little strong through the stretch. Drop him down a couple of seconds every week. Three or four weeks before his race I would give him three heat repeats to key him up for his race. Care should be taken not to tire the colt; the main thing is to keep him cheerful. Use an easy bit, handle his mouth gently, and have him drive good and straight on the bit."

Roy Miller writes: "A two-year-old should be jogged every clear day, except Sunday, from three to six miles, or enough to keep him quiet. After four or six weeks commence giving him slow miles every other day, with a skip, depending on a colt's spirits and his ability to take work. I would train him from then on just as I did Justice Brooke. Enclosed find a summary of his work." (This will be presented later.)

Charles A. Valentine writes: "There are no two colts that can be trained alike. It would be impossible for any man to tell you how to train colts. There are a few general rules—colts should be broken when they are eight months old and have nice big paddocks with plenty of grass and plenty of good oats and then have a competent trainer, who will train them according to what

they can stand. My way of handling colts, after I break them, is to keep them going from that time on, according to their condition. No two can be trained exactly alike."

Budd Doble writes: "I have had but very little experience in handling colts, having devoted most of my time to aged horses. However, in my judgment, you should commence with the two-year-old as early as possible. As to how far and often to jog, and when to speed, etc., depends very much on the colt, and has to be done entirely on judgment. Hardly any two will need the same training."

Jos. L. Serrill writes: "I start in November of a colt's yearling form to prepare him for the two-year-old futurities and jog him every clear week day from three to five miles. I start working heats, twice a week, as soon as the weather permits. I work quite a lot of miles at first in 3:30, then drop down two to three seconds. Very soon after I get the colt down two or three seconds a week. After I get him down to 3:15 I work repeats and after 2:50, three heat repeats."

O. H. Sholes writes: "Nowadays we expect a ten-year-old finished race horse at two years of age, so time is the most essential thing; therefore commence as soon as the colt is born and keep busy, teach it something every day. Ask yourself every day what you have taught the colt that day. The most necessary things are speed, manners, and

condition. Teach it manners first and then speed, then more manners, and then more speed. The condition is easy, it will usually come itself. To make manners, be gentle and kind, and not always too firm. Treat the colt as you would your son, if he cracks a joke laugh at it. It will be your turn to crack a joke next. To make speed, never let a colt know how fast he can go. Drive him his best often, but don't let him know it. The way to do this is by letting it step fast for an eighth or a sixteenth; speak to it, tap it with the whip, and let it go for fifty to one hundred feet, and take it right back to the clip it was going before it makes a break. I don't believe in making speed by forcing to a break, as many do. Don't let the colt make a hop or a skip. If it does, and continues, take him to the blacksmith. Have perfect balance and a perfect gait. Boot him for protection only and if he should hit himself, don't wait for him to wear his boots out (thinking there are more where yours came from) but take colt to the smith. When you think he can step an eighth in the spring in sixteen seconds, take out your watch on him and if he steps an eighth in twenty or twenty-three seconds he is a good colt. When you hear of a colt stepping an eighth in sixteen seconds the fourth time it was hitched it is usually a lie or they lost track of his workouts. Such talk is misleading to the new trainer and to the owner. Along in June I would work colt two repeats,

about twice a week for a few weeks, say at 2:40 to 3:00, and then go back to short brushes through July and get more brush. In August the work would be quite severe, say 2:40 down to about 2:20. The week before his race I would work him to step one mile in 2:14 and then I would be ready to beat Lord Allen in 2:11. If the colt came out of his first race sound, I would expect him to race well the next week, and then I would not be greatly disappointed if he trained off. Many of them do, and you must expect it. Possibly I would get another good race out of him later. Condition is like an ax, once you lose the edge it is hard to get back. Manners in shipping is a big help. Many race horses work good at home, but as soon as loaded on the cars, the stuff is off. Anna Axme 2:08¼, the futurity winner of 1912, would lay down on the cars and snore while they were running. She was at home wherever I was. The futurities should be won by men with only one colt, as they have more time to educate it than we fellows do who have a great many. I think all colts should be worked and raced in bandages. I do not believe in working a two-year-old three repeats."

Harold M. Childs writes: "A colt to be trained with a view of starting in the two-year-old futurities should, in the first place, have natural speed and be good headed and good gaited. I think also that they should have enough work as

yearlings to thoroughly manner them and develop and grow them. They should commence jogging about February 1 and, when the footing is good, should be jogged fast, right up to their gait. I do not jog over two miles at first, and never over three miles later. There is nothing so harmful to a colt as slow jogging over a long distance. They get thoroughly tired and sick of the game and learn all the bad habits in the catalogue. As soon as there is a track in the spring they should be worked the Gov. Stanford (Palo Alto) brush system, working them a little every day, except Sunday, and being very careful to not do too much with them any one day. After a month of this kind of work they can be worked two heats of the brush work, every other day, jogging two to three miles the day between or, what is still better, be turned in a nice grass paddock the day between the repeats. I will say here, that the failures I have seen in the use of the brush system have been because trainers make too much use of their colts. They think because they are using the brush system, that they must keep their colts right up on their toes all the time, and they go too far with them, not stopping to consider the distance they have been. If they would stop and figure the quarters they have been, it would often be from a mile and a half to two miles at speed. This would soon make a colt stale and tired of the game. After three or

four weeks of the repeat work at the brush system they can then be given two repeats every other day. Start them at 2:50 and drop them down three or four seconds a week, letting them step the last eighth within themselves, but up close to their speed limit. Gradually increase the brush at the finish of the miles until they can step the last quarter fast, then, later on, increase the fast brush to a half mile and so on, in the same manner as you would prepare an old horse for a race. I think colts should be worked some every other day, or three times a week, but after they can brush a fast quarter or half, the fast work should be limited to about once a week, going the other two workouts of that week say in 2:40 and 2:35 each day, letting them step the last part of the last heat up near the limit. When you get your colt to within a month of a race he should have three heats, once each week, letting him step the last one within five seconds of when you think he will have to go, provided he can do it well within himself."

W. H. Smollinger writes: "It seems to me that the trainers should be able to give more practical information than those who, like myself, can only speak from the experience gained by observation. And yet, taking into consideration that you can count, almost on the fingers of one hand, the trainers that have been successful with colts, and that their methods are as many and varied as the

religious denominations, it is doubtful if even they can lay down any hard and fast rules which will be of value. I apprehend that it all depends on the hand and temperament of the driver and on the colt to be trained. Some years ago I was very much interested in colt training, and took advantage of every opportunity to observe and to question the successful colt trainers. Only one, a Kentuckian, who had a large measure of success with colts, gave anything like an answer to my question 'What is the best way to train colts?' 'Train 'em like aged horses, sir,' he said. In answer to my inquiry if such a method did not produce lameness he replied 'Yes, sir, but it don't hurt 'em.' As there seems to be so many good ways to train colts, any method adopted, if it happens to be suited to the colt, is like the old lady's opinion of the doctrine of total depravity—'a good thing if well lived up to.' I apprehend it is after all a question of training the colt to make what he lacks. If it is true, as I believe, that, owing to our advance in breeding, 'speed is born with the foal' more frequently every year, it may be that the mile on mile system, with a good stiff brush at the end, will now produce more useful colts than the brush system. Every farm seems to have an abundance of speed. We seem to have found or stumbled onto a way to produce speed. Useful speed is now what we want. For that reason I think the colt should be in harness all

winter every day to develop manners and muscle, if he is to be trained for the futurities. Manners and individuality, I believe, will mean more every year. In conclusion I am forced to admit that I know nothing practical about the matter."

The present champion two-year-old trotter is Peter Volo, 2:04½, that trotted faster than any three-year-old trotter or pacer or any four-year-old trotter up to his time. After Peter Volo had made his yearling record, he was let down for the winter and sent back to Patchen Wilkes Farm. On January 9 of his two-year-old form he was shipped to Thomas W. Murphy at Poughkeepsie, N. Y. He was carried along slowly. At Grand Rapids, the week before his start in The Horseman Futurity, Murphy worked him a mile in 2:12¾, last half in 1:05, last quarter in :31¼, and back in 2:13¼, last half in 1:04¼, last quarter in :31½. The following Tuesday saw his first futurity. Adbella Watts led to the three-quarters in the phenomenal time of 1:35¾. Peter Volo then moved up from trailing and carried her to a break and won by five lengths, pulled up, in 2:09, a new world's trotting record for his age and sex. In the second heat Murphy began to drive from the word "go," doubtless hoping to reduce the world's record of 2:07¾, held by Native Belle. He was at the three-quarters in 1:35½. At the head of the stretch, when about 15 lengths in the lead, he went to a break on a

wet spot where the sprinkler had turned in the track. He soon caught and won by ten lengths in 2:10½. Peter Volo's next start was in the Horse Breeder Futurity at Salem on August 20. On account of heavy track Murphy made no effort to step a fast mile. In the first heat, while Peter Volo was leading in the stretch, Airdale came up very fast. Murphy sat still, thinking he had the heat won, but Airdale was coming faster than Murphy judged and, before he realized it, he had lost the heat in 2:15½. Peter Volo won the next two heats easily in 2:12¾ and 2:14½, although he made a break in the first turn in the second heat. The next start was in The Horse Review Futurity at Columbus, O., on September 25. Peter Volo showed slightly lame in warming up (some hidden trouble in front). He won both heats off in front in 2:06¼ and 2:07, although Alma Forbes or Lady Wanetka was after him all the way. The last start of the year was in the Kentucky Futurity. In the first heat Lucile Spier led to the three-eights but made a break, and from there on Peter Volo was never headed, winning in 2:09¼. Lady Wanetka made him trot the last quarter in 31¼ seconds and the two went under the wire, a half length apart, in better than a two minute gait. In the second heat Peter Volo went out for a record and was never headed in 2:04½, although Lady Wanetka moved up alongside him at the three-quarters in 1:33. Peter

Volo was given very little fast work between races.

The champion two-year-old filly is Native Belle 2:07¾ that took her record in the second heat of the Kentucky Futurity on Oct. 6, 1909, at Lexington, Ky., driven by Thomas W. Murphy. She was perhaps the most wonderful two-year-old that had then shown. She reduced by three full seconds the mark of Arion, against time, that had stood for 18 years. She was born great because she was not broken till April, only six months previous to her great performance. She had shown fast beside a pony the previous winter, however. Murphy went slow in her training at first, so as not to spoil her, yet by the last of July he worked her a mile in 2:23. About Sept. 15 she was worked in 2:14¾, last half in 1:04½. The next week she was worked in 2:14¼. The following week she started in her first futurity and won in 2:13¾ and 2:12¼, equaling, in the last heat, the two-year-old trotting race record of her day. She stepped the final quarter of this heat, against a wind, in 31¾ seconds. In the Kentucky Futurity she won the first heat in 2:12¾ and was then sent for a world's record in the second heat. She made the quarters in :33, :31, :31 (middle half in 1:02) and :32¾.

The previous two-year-old record, as has been mentioned, was held by Arion. His mile was in 2:10¾, made to high-wheels (no ball-bearings)

against time, on Nov. 10, 1891, over the Stockton, Calif., kite-shaped track, driven by Charles Marvin. Samuel Gamble once wrote that Arion finished this mile strong, while Palo Alto and Stamboul finished theirs, over the same track, "like drunken sailors." Gamble timed Arion in a race an eighth in 14¾ seconds and three-eighths in :47. Arion wore a peculiar six-ounce shoe in front, when he made his two-year-old record. On the inside from the middle of the toe to half way down the side, the shoe was wider and heavier than elsewhere. Marvin was of the opinion that this side-weight shoe kept Arion from brushing his knees and arms. Incidentally Arion wore almost all the boots in the catalogue in this record performance, except elbow boots. The quarter time of the record mile as reported in "The Horseman," was :33½, 31 (the fastest quarter on the track), :33½, :32¾ (this quarter was slightly up hill).

The first two-year-old trotting colt to lower Arion's record, was Justice Brooke, 2:09½, that took his record October 5, 1910, as did Native Belle, in the second heat of a winning Kentucky Futurity. He was a late foal (June 2). He was broken in the fall of his yearling form by Dromore Farm Superintendent, A. B. Scott. On March 1 of his two-year-old form he was turned over to Roy Miller, who then began his duties as farm trainer.

He was jogged on the road till March 25. Then he was brushed on the covered speedway at the farm, in connection with road work until April 10. The next day he was given his first mile over the farm half mile track. The diary of his work-outs (and a diary is a good thing to keep on all colts) and races is kindly furnished us by Mr. Miller.

April 11—3:40, 3:20, quarter in :44.
April 14—3:28, 2:59½, quarter in :43.
May 4—(Rainy weather, jogged)—Slow mile and repeat.
May 7—3:10, 2:55, 2:56.
May 10—2:56, 2:48½, quarter in :38½.
May 13—2:52½, 2:48½, 2:42½, quarter in :38.
May 17—2:58, 2:45½.
May 20—2:54 (rain).
May 24—Brushed in speedway (rain).
May 27—2:50, 2:43¾, 2:45.
May 31—Brushed in speedway (rain).
June 4—2:30, 3:10, 2:43.
June 9—2:56, 2:46, 2:40½, quarter in :37½.
June 13—2:52, 2:45, 2:42.
June 15—2:59, 2:51¼.
June 17—2:46, 2:35½, 2:35¼, quarter in :37.
June 23—Shipped to mile track at Detroit.
June 28—2:51, 2:36, 2:34½, quarter in :35.
June 30—2:46½, 2:36¾, 2:28¾, half 1:13¾, quarter :36.
July 6—2:49. 2:35, 2:25½, quarter in :35¾.
July 11—2:47¼, 2:36½.
July 14—2:47, 2:34, 2:29½, 2:26¼, half 1:09¾, quarter :33½.
July 18—2:47, 2:33.
July 20—2:45½, 2:30, 2:20½, quarter in :33½.
July 23—2:48, 2:34, 2:36.
July 26—2:49, 2:36, 2:34¼, quarter in :34.
July 28—2:45, 2:30, 2:21, 2:18¾, half 1:08¾, quarter :33.
August 1—2:47, 2:32, quarter in :34.
August 4—2:44½, 2:34, 2:23 (half 1:08, quarter :33), 2:24.
August 5—Shipped to Goshen, N. Y. Rain.
August 12—2:55, 2:40, 2:26, 2:28½, half 1:11½.
August 14—2:48, 2:33, 2:24½.
August 18—First start won in 2:27¼, 2:26¼.
August 22—2:48, 2:35½, 2:34½.
August 25—Shipped to Detroit.
August 29—2:47½, 2:34¾, 2:28¼, quarter in :34¼.
September 1—8:45½, 2:33, 2:20, 2:23, half 1:07½, quarter :31¾.
September 7—(Rain between)—2:43, 2:30, 2:20, 2:15¼, ¼ in :33¼.
September 10—2:49, 2:34¾.
September 13—2:40, 2:28½, 2:16½ (½, 1:04¼; ¼, :31¾), 2:15½.
September 17—2:50. 2:37.
September 19—Second start won in 2:27¾, 2:22¼.
September 21—Shipped to Columbus. Ohio.
September 23—2:42, 2:29, 2:21, 2:19½, quarter in :30½.
September 24—Third start. 1-2-2 in 2:14¾, 2:09¼, 2:11½.
September 30—Shipped to Lexington (delayed in shipping).
October 3—2:43, 2:28½, quarter in :35½.

October 5—Fourth start, won in 2:11½, 2:09½.
October 10—2:41½, 2:27½.
October 13—2:45, 2:40½.
October 17—Shipped home.
October 19—Shoes off and retired for season. Shoes weighed 5¾ ounces forward, 3 ounces behind.

The two-year-old training of Axtell, a champion two-year-old trotting stallion, on both mile and half-mile tracks, was rather peculiar, and will doubtless be of interest. He was driven to a record of 2:23 at Lexington, Ky., Oct. 8, 1888, by C. W. Williams. The following is an excerpt from Mr. Williams' own story from the Christmas number of "The Horseman" in 1889:

"Some time between March 1st and 15th he was taken up and jogged from four to six miles a day. It will be hard for any one to believe that he could be made to eat the amount of feed given him during March and April; as, think of a two-year-old being fed five quarts of oats, two of bran, two of carrots, and three or four ears of corn, three times a day, and all the coarse feed he would eat. This is not exaggerated in the least. As the weather became warmer he was fed less, but could not, at this time, trot a quarter in less than a minute, while I am informed Sunol could, at that time, go the same distance in thirty-five seconds. Up to this time I had driven Axtell but a few times, but as the man that had been jogging him was sent to Michigan with some mares, I took him to work. At first I was not pleased with the way he drove, as he was stubborn, and wanted to have his own way a little too much to suit me.

"After driving him two or three times I became disgusted, and one day struck him rather sharply with the whip. He squared away and went straight far enough and fast enough to convince me he would make a trotter if I developed him as I should. Up to this time I had never worked a colt that could trot in 3:00, did not know how others worked their colts, and the only thing for me to do was to use what little common sense nature had given me.

"I had for years been quite a pedestrian, practicing a great deal for pastime, and the exercise. I knew by experience how long it took to get the muscles in condition for hard work, and how sore and lame it made me after any great effort, be the distance ever so short, and this after I had supposed I was in condition for this kind of work. I also knew to have great speed for a short distance it was necessary to cultivate the muscles for such efforts, and the only way this could be done was to make these great efforts every two or three days, but not too often. I also knew by experience that it was necessary for me to consume plenty of muscle-making food. In fact, I had learned how to condition myself for this kind of work and how to take care of myself after a great effort.

"After considerable thought I decided to work Axtell as I developed myself and see what the result would be. His road-work was continued, with an occasional brush where the footing was good, and every time I started him up he could go faster than he ever had before. About the 20th of May he was hitched to the sulky for the first time and taken to the track. Up to this time I had no opportunity of knowing how fast he could go, but the first time he was

moved to harness I found he could go an eighth in less than 0:20. That was not very fast, still it showed a big improvement over the speed he had shown in the fall.

"Being pleased with the colt, I was determined to do the best I could with him. He only saw the track about two days in a week, the other days (he was never harnessed on Sunday) being set aside for jogging on the road for eight or ten miles in an hour. He was driven without a check and always in an open bridle. The days he was given track-work I jogged him about three miles the wrong way of the track, then turned and went the right way about two miles, and started him up from two to four times in that distance. I would drive him about thirty or forty rods at speed, then jog him a short distance before asking him for another burst of speed. After I thought him in condition I drove him in these brushes about as fast as he could go.

"During all this time he was fed large quantities of grain and all the hay and grass he would eat. About the middle of July he was asked to go his first half-mile and did it handily in 1:15. Ten days from that time he covered the same distance in 1:12. About August 1st he was driven a easy mile in 2:38½, the first one he had ever gone. In this mile he was brushed four or five times, and the rest of the time only moved along at about a 3:00 gait. This mile was about as fast as he was driven in his work in his two-year-old form, and on August 9th he started at Keokuk, Iowa, in his first race. All of the other starters were three-year-olds. In the third heat, over a poor half-mile track, he distanced the field in 2:31¼, and the next morning Axtell's name appeared in the daily papers for the first time. Since that time none has appeared as often."

Chapter VI—Three-year-olds.

THE training of three-year-olds does not differ greatly from that of the younger colts except, with added age, most youngsters require more work. It has been thought advisable to devote a separate chapter to the three-year-olds, as such a division admits of a more careful study of several prominent colts of that age, whose training will be of interest to the reader.

If a colt has been trained as a yearling, or as a two-year-old, its training as a three-year-old will be along the lines previously written of, but extended as, in the opinion of the trainer, best suits the individual case.

If a colt has not been previously trained; and the owner desires to race the colt as a three-year-old, it will be necessary to proceed with early training, as previously set forth for colts of a younger age, except that the education and training will have to be rushed and crowded into a shorter space of time.

To save repetition of advice we will assume that the colt has been previously trained—raced as a two-year-old if you wish.

In the late fall of its two-year-old form, the trainer must decide whether the colt is to be turned out. Some horsemen turn two-year-olds out from November 1 to February 1 and then commence jogging, while others prefer to jog the colt all winter—each owner or trainer must decide this point for himself.

The jogging will consist of from three to six miles a day (trainers' opinions differ) except Sunday. As the jogging progresses a little brushing may be indulged in, at the end of the jog, if desired. About April 1st the trainer should begin to work colts for speed. Some drivers start with a full mile in about three minutes, others start with half-mile heats and gradually increase the distance till a mile is reached. Each succeeding work day the colt is asked to go a little faster mile, but the drop must be gradual, and, if the colt gets to going rough or bad-gaited, the fault should be corrected, if possible, before much more is done, unless the colt be one that improves in gait as he improves in speed. The dropping down has to be done as the trainer thinks best. W. O. Foote says: "The more speed a colt shows at this time the less fast work I give him." This is good advice, for many colts are made speed crazy by dropping them too fast. In some families the colts come to their speed more quickly than others, and, as a consequence, careless trainers have militated against the success of such families, by

ruining colts. In addition to working miles, it is assumed that those who believe in the brush system will make speed with it as described before.

After the colt has been worked mile heats, and from two weeks to two months later (according to individual judgment, location, or weather), the colt should be worked two heat repeats. Later, say from two to four weeks (by this time it will be May or June) three heat repeats are in order. Still later most trainers work four heats, including the "opener," but very few go beyond that, as most futurities are decided under the 2 in 3, or three-heat system. In midsummer, if it is expected to start in the Kentucky Futurity (a 3 in 5 event) it may be thought advisable to work five heats.

It is important that a colt be worked in company as much as possible and taught to trail, also to come out from behind and race beside another horse without trying to rush past.

Experience Not Always a Criterion.

It would be useless to go into the minor details of training and working colts. No set rules can be laid down. If the colt shows considerable speed he will doubtless be placed in the hands of an experienced trainer. Experience even is not always a teacher. Take, for instance, the case of Don Chenault and Etawah in 1913. Don Chenault won the Review futurity at Columbus,

defeating Etawah. Two weeks later Etawah turned tables on him. There are many features of interest in both races, and about what took place between and afterwards. At Columbus Don Chenault defeated Etawah by an eyelash the first heat. The second and final heat was easily won by Don Chenault, after an early break had put Etawah out of the contest. After this race Don Chenault was worked very little. Two weeks later he started in the Kentucky Futurity and won the first heat, off in front all the way. In the second heat he seemed very rank, made two breaks and finished seventh. In the third heat he became practically unmanageable and was distanced for running. Don Chenault's driver attributed his defeat in the Kentucky Futurity to the fact that the colt had not been worked enough between the two races. He points to the fact that after the Kentucky Futurity the colt was given a stiff workout and, six days after his defeat, won the Championship stake in two straight heats. As Etawah was not a starter in this last race it cannot be brought into comparison with the other two. Etawah, that had been defeated at Columbus on September 24, participated in a race against aged horses on October 4 and trotted five hard heats, finishing 5, 3, 1, 1, 2 in 2:08¼, 2:10½, 2:10, 2:09½, 2:13, and then was drawn, as he was becoming exhausted, and the Kentucky classic was in mind. In the Kentucky Futurity

Etawah was a sorry looking spectacle. After Don Chenault had won a heat in 2:05¾, and Peter Johnston one in 2:08¾, Etawah was the freshest horse in the race and won the next three heats handily in 2:08¾, 2:10, and 2:12. The driver of Etawah, who had been criticised for giving his colt so much work between futurities (the same people criticised the driver of Don Chenault for not doing the same thing!) is of the opinion that the hard work between the two futurities put Etawah "on edge," as the saying goes, for the big race. Others believe that Etawah won on his gameness and would have won without such harsh treatment. And so we say, even experience is not an indisputed criterion for training colts.

Henry M. Jones writes: "Three-year-olds should be taken up not later than February 1 and jogged five to six miles a day, except Sunday. One should start to work heats not later than April 1, starting with miles every other day in three minutes and dropping down. If colt has shown speed in its two-year-old form it can be dropped down to 2:45 in two weeks. I brush an eighth away from the wire and an eighth home. In two weeks from the time of working heats the colt should be given two heat repeats, and from two to four weeks later three heat repeats, first mile in 2:40, last two in 2:35 or 2:30, with first and last quarters in 35 seconds. When the

colt has been dropped down to 2:20, brush it to the half in one heat and then home from the half in the other fast heat, but rating the slow half so both miles will be practically the same. Finally the colt may be worked four heats, the first an opener, the second mediumly fast, and the last two the fastest but in about the same notch. Never allow the colt to slow up immediately after passing the wire. I trained Waverly, p., 2:04¼ (which I drove a quarter in 28 seconds as a three-year-old), Maggie Winder (3, p.), 2:06¼, and Fleeta Americus (3), p., 2:09½, in this manner."

W. O. Foote, who trains in Texas, writes: "The colt should be taken up the fall or winter before he is three years old and jogged three to five miles a day, Sunday excepted. In March start working half mile heats and gradually increase to a mile. The time of these heats depends on speed shown. The more speed a colt shows, the less fast work it should have. No two colts are alike, so cannot give any advice about dropping them down. Two heat repeats may commence in April in a warm climate, then three heats in May. Four heats are plenty. A very important thing in educating colts is their shoeing and balancing. Unless this is done carefully and correctly it will be almost impossible to win a futurity. Colts should be shod as lightly as possible, and, as a rule, with as short feet as possible. The balancing of a colt depends

largely on the proper angle of his feet. He should also be taught to go on as light a line as possible, but, of course, all will not do this. Colts should be taught to trail other horses and work beside them without wanting to rush by as fast as to cause them to break or trot themselves out before the end of a mile. Colts do better with an occasional let up of a week or ten days and jogged every day or turned in a paddock to exercise themselves. I never work my colts miles as fast as they will go. Governor Francis' fastest workout as a three-year-old was in 2:14¼, yet he trotted in 2:11¼, 2:11½, 2:12¼—the fastest three heats trotted by a three-year-old stallion until 1913. The Climax's fastest workout as a three-year-old was in 2:12¼, yet he paced in 2:07 in a race."

Sam J. Fleming writes: "Futurity prospects should be jogged three to six miles daily all winter after two-year-old training or campaigning. Start to work mile in three minutes and drop down slowly to 2:40. Then 30 to 60 days later start repeating. The trainer will have to use his own judgment from here on. Baroness Virginia (3), 2:08¼, was worked in 2:17¼ as a two-year-old and could have trotted in 2:15 or better. As a three-year-old she was not worked faster than 2:26½, and was raced into condition over the half-mile tracks, beating the half-mile track record for her age. At Indianapolis, in the Western Horseman Futurity, she trotted four heats around

2:15. At Columbus the next week Murphy worked her in 2:14 and 2:10¼ and won the Stock Farm Futurity around 2:10 three times. At Lexington he worked her two heats around 2:15 and then won the Kentucky Futurity. All together she had less than 20 heats better than 2:20, including all her work and races. In my opinion colts need to be kept fresh. They should not have too many miles, but plenty of speed making and conditioning. They will race with this work if game, and if not game no amount of staying-up will get them to Futurity form."

Shoeing of 1911, 1912 and 1913 Colts.

Speaking of shoeing, we made a comparison of the shoes worn by the fastest three-year-olds of 1911, 1912, and 1913, as illustrated in the Christmas numbers of "The Horseman" of the respective years. The following tabulation of averages tells its own story:

Year.	No. of colts observed.	Wt. Front Shoes.	Angle Front Feet.	Length Front Feet.	Wt. Hind Shoes.	Angle Hind Feet.	Length Hind Feet.
1911	16	7	48	3⅝	4	53	3½
1912	12	7	49	3⅝	4	54	3⅝
1913	35	7¼	48¼	3⅝	4	52	3½
Av. for 3 years		7⅛	48⅓	3⅝	4	52⅔	3½
Av. for pacers		7	48	3½	4	51½	3

The table contains the average for both gaits. A line is added at the bottom to show the average for pacers. As there were only 10 pacers considered out of a total of 63 colts, their influence in the main table is not considerable.

Let us see what style of shoes are being worn by colts. The following table gives the different styles, with the names and total number of colts that wore each. All aged colts appear in this table, from yearlings to three-year-olds:

FRONT SHOES.

	Trotters.	Pacers.
Plain shoe	11	1
(Lady Wanetka, Peter Johnston, Airdale, Anna Ax Me, Colonel Cochran Jr., Ima Jay, Pine Knot, Royal Hall, Ruby Watts, Mediumore, Sweet Alice and Mightellion.)		
Plain shoe with heel calks	4	0
(Bonnie Setzer, Don Chenault (2), Onset and King Clansman.)		
Plain shoe with creased toe	4	1
(Etawah, Homer Baughman, Judge Jones, Todd Forbes and Mamie Guy.)		
Plain square toe shoe	2	0
(U. Forbes, Atlantic Express.)		
Plain square toe shoe with heel calks	2	0
(Don Chenault (3), The Right.)		
Plain shoe with creased toe and heel calks	1	0
(Willow Mack.)		
Plain shoe with grab	1	0
(Grace O. C.)		
Plain shoe with grab and heel calks	1	1
(Roberta Bingen and Herman Wenger.)		
Plain shoe with four calks	1	0
(Mahomet Watts.)		
Bar shoe, plain	3	1
(Miss Stokes, Rhythmell, Binville, and Miss De Forest.)		
Bar shoe with heel calks	5	0
(Peter Volo, Manrico, Nowaday Girl, Barbara Overton and Sweet Spirit.)		
Bar shoe with creased toe	3	0
(Adlon, Burt Axworthy and Minna Ward.)		
Bar shoe with heel calks and creased toe	1	0
(Princess Nelda.)		
Bar shoe with grab and heel calks	1	1
(William, Box.)		
Bar shoe with four calks	1	0
(Fay Kirk—1 forward calk missing.)		
Swedged shoe	5	4

(Bonington, Little Bernice, Tilly Tipton, Brighton B., Lord Brussels, Margaret Parrish, Hydrad, King Daphne and The Climax.)

Swedged shoe with heel calks 1 0
(Hall Mark.)

Swedged bar shoe with square toe 1 0
(Justice Brooke.)

Swedge bar shoe with heel calks 0 1
(Direct Gentry.)

Swedged bar shoe 2 0
(Lucile Spier and Dillon Axworthy.)

Rim shoe 0 2
(Impetuous Palmer and The Conclusion.)

Memphis bar shoe 1 0
(Baldy McGregor—only one bar used.)

Memphis nub shoe 1 0
(Sure Mike.)

HIND SHOES.

Plain shoe 6 1
(Lady Wanetka, Peter Johnston, Anna Ax Me, Todd Forbes, Mediumore, Fay Kirk and Grace O'C.)

Plain shoe with heel calks 12 1
(Atlantic Express, Binville, Bonnie Setzer, Direct Gentry, George Rex, Ima Jay (1 calk only), Nowaday Girl, Onset (1 calk only), Roberta Bingen, Royal Hall, King Clansman, Hydryad and Col. Cochran Jr. (1 calk only.)

Plain shoe with grab and heel calks 2 1
(William, Box and Mamie Guy.)

Plain shoe with creased toe and heel calks..... 1 0
(Etawah.)

Plain shoe with heel calks and outside grab 1 1
(King Daphne (oblique toe) and The Conclusion.)

Plain shoe with square toe and heel calks 2 0
(Mahomet Watts and The Right.)

Bar shoe with grab 1 0
(Princess Nelda.)

Bar shoe with grab and heel calks 0 1
(Herman Wenger.)

Swedged shoe 9 1
(Peter Volo, Don Chenault, Miss Stokes, Adlon, Minna Ward, Brighton B., Justice Brooke, Margaret Parrish, Mightellion and The Climax.)

Swedged shoe with heel calks 6 0
(Don Chenault, Baldy McGregor, Bonington, Pine Knot, Lord Brussels and Sweet Alice.)

Swedged shoe with square toe 3 0

(Airdale, U. Forbes and Judge Jones.)		
Swedged shoe with square toe and heel calks	3	1
(Dillon Axworthy, Homer Baughman, Mahomet Watts and Burt Axworthy.)		
Swedged bar shoe with heel calks	1	0
(Manrico.)		
Half swedged shoe	1	0
(Ruby Watts.)		
Half swedged shoe with heel calks	4	2
(Hall Mark, Lucile Spier, Sure Mike, Tilly Tipton, Willow Mack, Miss De Forest.)		
Rim shoe with heel calks	0	1
(Little Bernice.)		
Half rim shoe	0	1
(Impetuous Palmer.)		

It will be noticed that the most popular front shoe for trotters is a plain one. Next in popularity comes the bar shoe with heel calks, and the swedged shoe. The most popular pacing shoe is the swedged.

The most popular hind shoe for trotters is the plain shoe with heel calks, followed by the swedged shoe, then the plain shoe.

In speaking of calks on a front shoe we mean the long narrow calks welded on the shoe parallel to the direction of travel. sometimes called jar calks. Heel calks on the hind shoe are those formed from the body of the shoe itself.

The classification above is not elastic enough to accurately indicate the wide difference between shoes of the same class. Take the plain front shoes used by 11 trotters and 1 pacer. According to our classification all are alike, yet each one differs from the other in some particular, either as

to weight, shape or size. The same is true of any other kind of shoe. To describe each colt's shoes accurately a description and cut would have to be printed separately. This would make tiresome reading and would defeat the purpose of our table, in which it is impossible to show such minor differences as trailing heels, side clips, heavier toes, etc.

It will be noticed that certain trainers seem to prefer certain shoes. Thus Walter R. Cox used plain shoes in front on Lady Wanetka and Peter Johnston. Thomas W. Murphy used a bar shoe with heel calks on Peter Volo, Barbara Overton and Sweet Spirit. Ed. F. Geers used a plain shoe with creased toe on Etawah, and Homer Baughman, although the former was a trotter and the latter a pacer. Many other similar comparisons might be drawn.

Champion Three-Year-Olds.

Let us conclude our chapter with a consideration of the champion three-year-olds. The present champion is Colorado E, 2:04¾, trained and driven by Guss Macey. The previous champion was General Watts, 2:06¾, trained and driven by Mike Bowerman. Previous to that was Fantasy, 2:08¾, trained and driven by Ed. F. Geers. Previous to that was Sunol, 2:10½, trained and driven by the late Charles Marion. Previous to that was Axtell, 2:12, bred, owned, trained and

driven by C. W. Williams, practically an amateur at the time. This takes us back to 1889, beyond which there is little to be learned that would be of interest or benefit to present-day horsemen.

Colorado E., 2:04¾.

Colorado E was sensational as a yearling and was driven a quarter at that age in :33½ by W. W. Evans. This resulted in the colt's sale to Geo. H. Estabrook for $5,000. Colt was then turned over to Guss Macey. As a two-year-old the colt sprung a curb and could not be worked properly, yet in the Kentucky Futurity he was second to the great Native Belle, 2:07¾. After the Futurity, Colorado E. was turned out at Lexington. He was taken up December 1 and shipped to Denver. His jogging began on his arrival in Colorado. He was jogged about four miles a day, except Sunday, until March 1, when he was double-headed miles in from 3:15 to 3:00 every other day through March. By April 1 he had worked a mile in 2:35 and was dropped down about 3 seconds a week. In April Macey began giving him two-heat workouts, twice a week. By May 1 he had been in about 2:20. During this month he was given two heats the first of the week and three heats the last of the week. By June 1 he had been in 2:15. On June 14 at Detroit he worked in 2:11. At Grand Rapids, on July 22, he won easily in 2:12¾ and 2:12¾.

At Kalamazoo, on July 29, driven by Reamey Macey, young son of Guss, he worked a mile in 2:06¼ or a half second faster than the world's record, last half in 1:01¼, third quarter in 30 seconds. At Cleveland he worked in 2:07¾ and 2:07½. At Empire City, in his second start of the year, the Matron Stake, he won easily in 2:07¼, 2:07¾, the fastest two heats trotted by a three-year-old up to that time. At Boston he won the Horse Breeder Futurity pulled up in 2:06½ and 2:07¾. At Syracuse he won the Horse World futurity in 2:13¼, 2:08¼. At Columbus he won the Stock Farm futurity in 2:08¾ and 2:05¾. In the Kentucky Futurity everybody was out to beat him, and here he suffered his only defeat. In his final start, the Kentucky stake, he won in 2:11¼ and 2:04¾, a new world's record. His winnings for the year were $19,790.25. Colorado E was a large rangy colt, with a sweeping yet frictionless stride, which enabled him to cover ground in a deceiving manner.

Colorado E. wore four ounce square toe plain shoes all around, very light close-fitting quarter boots in front, ankle and speedy-cutting boots behind, two-minute harness, blind bridle, snaffle bit, and Crabb overcheck bit.

General Watts, 2:06¾.

General Watts was trained lightly as a two-year-old by Harold Childs and given a time record of 2:27½. He was then the property of

Senator J. W. Bailey and Gen. C. C. Watts. Shortly thereafter he became the exclusive property of the latter gentleman, who placed him in the hands of Mike Bowerman on March 18, 1907. The colt was thin and weak, following a severe illness, and was naturally small in size, so his training was done carefully, yet he made speed fast. He was jogged until May 1, then was given slow repeats from 2:40 to 2:30, twice a week. Around July 1 he showed a mile in 2:15¼. At Cleveland, Aug. 1, in his first start, he was interfered with in the first heat and was 5-4 in 2:13¾ and 2:11¼. At Readville, on Aug. 20, in the Horse Breeder futurity, he won in 2:09¼ (middle half in 1:01¾) and 2:09¼, lowering the three-year-old stallion record of 2:10½, held by Arion. In the Stock Farm futurity at Columbus he led to the half in 1:02½, but was beaten by Kentucky Todd in 2:08¾, which equaled the world's record held by Fantasy. Gen. Watts seemed to tire and was only fifth the next heat in 2:11. Mr. Bowerman attributed his defeat to lack of work. The race seemed to leg him up and the next week, at Columbus, he won the Review futurity in 2:11, 2:09½ and 2:09½, losing the third heat. At Lexington he won the Kentucky futurity over a slow track in 2:12¼, 2:11¼ and 2:11. The second week at Lexington he trotted the first heat in 2:06¾ (last half in 1:02¾—lowering the world's record by two sec-

onds) and 2:09¾. His year's winnings were over $20,000 and he retired sound. The following is quoted from Mike Bowerman's account of the training of Gen. Watts, which appeared in the Horse Review of December 17, 1907:

As to any system of training colts, I have none. I train horses differently from any other man that I ever saw train. After I thought I had Gen. Watts thoroughly seasoned, I did less jogging than any one generally does. I went to the track less than almost any one else goes. If I can get out on the road I care little about the track, only for speeding purposes. After getting him into condition I would work out Gen. Watts twice a week; good fast miles, rated all the way, not driving him any fast quarters or eighths. After I drove him a mile in 2:15¼, which, my recollection is, was some time the first part of July, I began to teach him to get away from the wire fast; after going about an eighth taking him back and stepping the last eighth at the end of a mile. I have seen trainers go out to work their horses, it being what they called "work out day" for certain ones. Possibly the horse, for some unknown reason, would not work as well as he had at other times. Then the trainer would whip him and run him and say, "Well, I will work him another heat; I will make him worse or better." I never do that. When I start to work a horse and he does not act right, I take him to the stable, for it is a sure thing that there is something wrong with him, and he not being able to talk, I will wait and see what the trouble is or was. I use less bandages than any one, I use no body wash at all, nothing in the way it is mostly used. In short I trained General Watts as I do all other horses in my charge. Trained him when he felt good, if it was his time to work.

As to what shoes he wore and the angle of his feet, he wore a bar shoe in front, weighting 6½ ounces, with 3-ounce quarter boot, the angle of his foot being 47 degree, with a 3-inch toe. His hind shoe weighed less than three ounces, 3-inch toe, angle 51. He wore shin boots behind with a very light coronet boot, a very light knee boot for protection only, for I had driven him without any boots a little ways as fast as he could go, he never touching a hair. I wore an open bridle on him with his head checked a little above the level of back. No martingale. I fed him twelve quarts of grain a day, with all the hay that he would eat. His stomach and digestive organs were always in perfect order. After I said he was ready to trot he should never have lost a heat, and the only time that he did I myself was to blame for it, not him. While he has done what no other three-year-old ever approached, the world does not know what his real ability was, for I am just as sure in my own mind, had I hit the right day and track, he would have trotted a mile in 2:05 or better, as I was sure that he would trot a mile in 2:07½ or better, which I did not hesitate to say the day he trotted in 2:06¾.

Fantasy, 2:08¾.

Fantasy was broken and worked as a two-year-old and showed speed at once. As a three-year-old she started seven times and was never

defeated, except in one heat. At Nashville after winning the fast heat in 2:16½, distance was waived and a runner sent along to prompt Fantasy and she trotted the second heat in 2:08¾. She was a nervous, high-strung mare, but very steady.

Sunol, 2:08¼.

Sunol (the last of the high wheel three-year-old champions) was a mare of somewhat whimsical form. She was 15.2 hands high at the withers and 16 hands behind. She was fast in the paddock but gave trouble in breaking, being high strung and cranky and had to be handled gently. She was broken to harness at a year old, worked a little beside a steady going horse, then tried to single harness while she was very unruly. At first it took about an hour to hitch her up. She was worked carefully during the winter of her yearling and two-year-old form, but brushed at speed a short distance (say a quarter in 35 seconds) every other day or two. On Aug. 1 of her two-year-old form, four days before her first start, she worked her first full mile at Los Angeles in 2:40½ and repeated in 2:38. The next day she was merely exercised and on the following was repeated in 2:36 and 2:33½. She won her race in 2:34½ and 2:25. She was taken home and brushed quarters and halves. She was shipped to Petaluma and on Aug. 20 worked in 2:38 and 2:33. Two days later she

won in 2:28½ and 2:26¾ and was returned to Palo Alto until the second week in October. She was then shipped to San Francisco, where she was given two repeats, the first in 2:32 and 2:35, the second in 2:28½ and 2:23, the latter on Oct. 18. Two days later she started against the world's two-year-old record of 2:21 held by Wildflower, and although suffering from sexual excitement reduced the record half a second. A week later, with only brush work in the meantime, she trotted in 2:18. She was then taken home and jogged all winter to skeleton wagon. She was turned out in a paddock and one day, in playing, strained a tendon in her right hind leg. The resultant swelling was kept down by cooling lotions and cold showers. Jogging was commenced on May 19, but she was not brushed for a month, as her hind ankles looked suspicious. She was then given the brush system till she could step a quarter in 30 seconds, then mile and repeat work. On being shipped to San Francisco she contracted a very severe case of distemper. At Napa the weather was hot and this, with her nervous temperament, kept her much reduced in strength. At Petaluma she was defeated by Lillian Wilkes after she had won the fast heat in 2:21½. A week later, at Oakland, she turned the tables and won in straight heats, best time 2:20. At Sacramento, on Sept. 12, she walked over in 2:16½. Five days later she won, best

time 2:18. At Fresno, on Oct. 2, she went against time in 2:13¾. At San Francisco, Oct. 12, she walked over in 2:15¾, and again on November 9 in 2:10½. She closed the season at Napa, on Nov. 16, when she trotted against time in 2:15.

Axtell, 2:12.

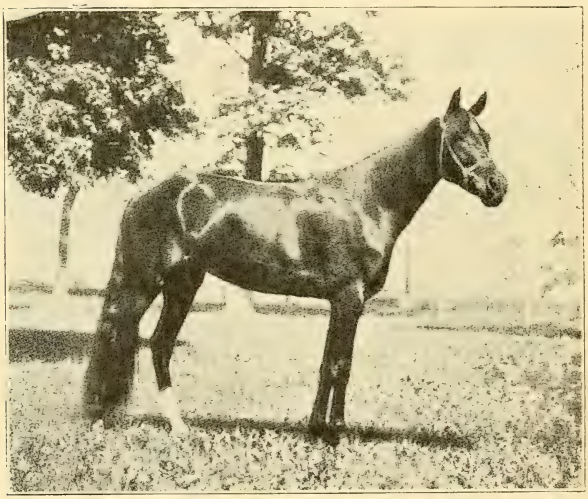
Axtell's training as a two-year-old, as recounted by C. W. Williams, appeared in the last chapter. From November 1 of his two-year-old form till the first of March following he was not jogged, but turned out every day and fed all the oats, bran and carrots he could eat, with cornstalks for coarse feed. On March 1 his jogging commenced with one mile. This was increased a mile a day till he was taking twelve miles of road work a day. This was kept up till May 1, when he was worked on the track twice a week, but jogged twelve miles every other day. His track work was on the brush system. In addition to all this work he was bred to 22 mares between March 1 and July 4, but was not given much work the days he served mares. Up to the last of June he had not been a mile faster than 2:40, but had been speeded fast quarters and halves. The last week in June, at Cedar Rapids, Ia., he reduced the three-year-old half mile track record from 2:26½ to 2:21¾. On July 2, at Minneapolis, Minn., he started against the three-year-old stallion record of 2:18, held by Sable Wilkes, and, although it

was a cold raw day, with a light rain falling, he trotted in 2:15½. On July 4, at Independence, Ia., he reduced the half-mile track record to 2:20½. For the next few days he was jogged eight to ten miles, then shipped to St. Paul, Minn., and started to beat 2:15½, and equalled it, which constituted a losing performance; the track was dead and cuppy and thought to be about three seconds slow. Axtell was then shipped to Independence for a few days' rest, then to Cleveland, O., where he further reduced his record to 2:14¾. Then on to Chicago, where he went an exhibition mile in 2:15¼ and, two days later, won a race, best time 2:14. The next week at Independence he worked in 2:22, the following week at Des Moines in the same notch. He was then sent home and jogged three weeks. At St. Louis he worked in 2:19, then was shipped to Terre Haute. Early in the week he was driven an exhibition in 2:14¼. The next day he was not harnessed, the following day he was jogged six miles to cart on a country road. The next day, Oct. 11, he reduced the three-year-old record, and also the all-aged stallion record to 2:12. That night he was sold for $105,000.

In Conclusion.

We have now followed the colt from the day of its birth to the fall of its three-year-old form. By this time the reader, if he has absorbed and digested all that has been written, by the famous

horsemen who have contributed to this work, and even if he is an amateur, will have formulated ideas of his own on the proper way to train and race. When a man reaches that stage, further advice is superfluous.



Native Belle, 2:07¾ (in 1909), World's Champion Two-year-old Trotting Filly.

Appendix—Chronic Indigestion.

By Dr. A. S. Alexander.

There is on almost every stock farm, where horses are kept, at least one horse that does not "do well." His coat is coarse and stands on end; his urine at times is plentiful, but at other times scant and like honey. When he stands in the barn for one day without work or exercise, his hind legs stock up and when he is put to work he sweats easily and without hard labor or sweats profusely after he is placed in the barn at noon or night. He is a ravenous eater and gets all he wants to eat, but is not satisfied and so proceeds to eat his bedding. If he is watched closely, it will be seen that he has the habit of raising his upper lip as if yawning; his manure differs in composition from time to time. Sometimes it is composed of small, hard, dry balls; at other times the balls are larger and covered with slime; again it comes in masses, undigested and foul smelling.

The horse is troubled with chronic indigestion and such animals usually bolt their food without proper mastication. Examination will sometimes disclose the fact that the molar teeth are in such condition that proper mastication is impossible. It should be understood by all owners of horses that the molar teeth in the horse do not completely pass each other when chewing. The outer

edge of the upper molars and the inner edge of the lower molars in time becoming long and sharp and interfere with proper mastication. This necessitates having the teeth "floated" (filed down) once a year after the horse is seven or eight years of age.

The first step, therefore, in seeking to cure the chronic indigestion alluded to is to have the teeth put in good order by a veterinary dentist. To go back a little, it should be mentioned that as a rule in practice we find most of these cases in barns that are close from poor ventilation, dirty from lack of cleaning and damp from improper drainage of the building site or from inadequate measures adopted for removal or absorption of liquid excreta. We also find the same condition existing where horses are given very hard water to drink, where sewage impregnates the drinking water, and where drinking water is habitually given after instead of before feeding.

How to Feed and Water.

In the feeding of horses suffering from chronic indigestion, it should be remembered that the horse digests oats in the stomach and takes care of water and hay in the large intestines. For this reason the feeding and watering should be conducted upon the following theoretical plan: Water first, then hay, then oats. Mastication of the food is absolutely necessary in horses that are to do well and escape indigestion of any kind. Where

ground food is given it is taken into the stomach without much mastication, hence it is not properly mixed with saliva which is necessary for its subsequent digestion. When oats are in process of mastication, four times its bulk of saliva is secreted in the mouth and this is needed to digest it. Where corn meal is fed, but a quarter of the proper amount of saliva is secreted and so on with the other ground foods.

The teeth having been attended to, the next thing is to stop bolting of the food, and for this purpose practical horsemen place the feed in an extra large, shallow feed box or put a few cobble stones in the feed box or mix a handful of old, dry, hard shelled corn or field peas among the oats or use one of the patent boxes.

To stimulate secretion of saliva, rock salt should be kept before the horse at all times, and when this is done he will drink more water and should always have it before but not after feeding.

How to Water a Horse.

The stomach of the horse holds but 3½ gallons. If he eats his oats, which remain in the stomach for digestion, and then drinks four or five gallons of water, the latter, as explained above, passes through the stomach and lodges in the large intestines, and in doing so must of necessity wash out undigested oats into the intestines, where they are not digested, but decompose and set up irritation or give forth gas, which causes colic.

How to Feed a Horse.

Feed the horse hay after drinking water the first thing in the morning and his oats after the small amount of hay has been eaten; at noon, water, then oats; at night, water, then oats, and two hours afterwards all the hay he will clean up before morning. More than twenty pounds of hay should never be offered to any horse, no matter how large and heavy he may be. Hay should not be kept in front of a horse all of the time, as it is on many farms; so used it is a positive detriment, rather than a benefit to the animal.

INDEX

Adbell, 1, 2:23..... 46
Adbella Watts..... 79
Airdale, 2:15¾..... 41
Airdale, 2..... 80
Alexander, Dr. A. S.....4, 107
Alley, Frank E..... 21
Alta Axworthy, 3, 2:10½.... 8
Arion, 2, 2:10¾.....81, 82
Athadon, 1, 2:27..... 46
Axtell, 2, 2:23..... 84
Axtell, 3, 2:12..... 104
Bailey, Senator J. W..... 100

Bandaging 39
Barber, Dr. W. A..5, 20, 49, 69
Baroness Virginia, 3, 2:08¼ 92
Bell Bird, 2:26¼.....46, 47
Benear 45
Benyon, James..... 70
Blanketing 40
Bowerman, Mike.....100, 101
Bradburn, John..... 7
Brush System 33, 36
Burgoyne, Harry..... 7

Chandler, J. B.....67, 69
Chandler, Stewart..... 44
Childs, Harold M.....75, 100
Chronic Indigestion..... 107
Colorado E., 3, 2:04¾..... 98

Cox, Walter R..... 97
Curry, Wickliffe..... 44

Diarrhea 7
Doble, Budd..... 73
Dodge, John L..... 19
Don Chenault, 3, 2:05¾..... 88
Dwyer, Matt..... 46
Dykstra, Dr. R. R..... 5

Edna the Great, 1, 2:29¼.. 49
Etawah, 3, 2:07½..... 88
Estabrook, Geo. H..... 98
Evans, W. W..... 98

Fantasy, 3, 2:08¾..... 101
Feeding 18, 110
Feeding Paddock..... 12
Feet, Dressing..... 52
Fleeta Americus, 3, p., 2:09½ 91
Fleming, Sam J..... 92
Foote, W. O.....87, 91
Freedom, 1, 2:29¾.....46, 47
Frou Frou, 2:25¼..... 46

Gamble, Samuel..... 82
Geers, Ed. F.....71, 97
General Watts, 3, 2:06¾... 99
Goldsmith, John A.....46, 48
Governor Francis..... 92

Halter-Breaking 20
Hazelton, James..... 4
Heather, Joe.....17, 28
Heel Boots 32
Hester C..... 43
High-Wheel Sulky.....81, 102
Hinda Rose, 1, 2:36½....47, 48
Holloway, Frank H..... 44
Hoofs, Packing..... 25
Howard, Dr. S. R..... 6

Jones, Henry M..... 90
Justice Brooke, 2, 2:09½... 82

Keets, O. M..... 46
Kentucky Todd, 3, 2:08¾.... 100

Lady Wanetka 79

Marvin, Chas.....
.....29, 33, 36, 38, 46, 47, 82
Maben, Walter..... 46
Macey, Guss..... 98
Macey, Reamey..... 99
Maggie Winder, 3, p., 2:06¼ 91
McCarr, Ned.....20, 24, 27
McCoy, Dr. J. C..... 30
McGraw, Joseph..... 17
Miller, Roy..8, 18, 23, 31, 72, 82
Moody, Hunter C.....42, 50
Murphy, Thomas W.....79, 97

Native Belle, 2, 2:07¾, 3, 2:06½ 79, 81
Navel Disease..... 9
Norlaine, 1, 2:31½..... 47

Palo Alto Training Paddock 49
Pansy McGregor, 1, 2:23¾.. 46
Peter Volo, 1, 2:19..... 42

Peter Volo, 2, 2:04½..... 79
Phippen, John S..... 46
Pony, Leading Beside..... 22
Pride 48
Pulling 34

Sanders, Millard..... 46
Scott, A. B..... 82
Seiter, Dr. Jack..... 52
Serrill, Joseph L.....27, 73
Shoeing 31, 52
Shoes of 1911, 1912 and 1913 Colts 93
Sholes, O. H.....23, 73
Smollinger, W. H..... 77
Stanford, Gov. Leland..... 33
Suckling Colt..... 4
Sudie D..... 47
Sunol, 3, 2:10½..... 102
Sweet Alice..... 71

The Climax, 3..... 92
Thomas, A. L..... 7
Three-yr.-olds, How to Train 86
Toe Weights 32
Training Paddock..... 49
Two-year-olds, How to Train 67

U. Forbes, 1, 2:21¼..... 50

Valensin, Count..... 48
Valentine, Chas. A.....40, 72

Water a Horse, How to..... 109
Watts, Gen. C. C..... 100
Waverly, p., 2:04¼..... 91
Weanling Colt..... 16
White, Ben..... 19
Whitely, Amos.....14, 69
Wilbur Lou, 1, 2:19½..... 44
Williams, C. W.....84, 104
Williams, Henry..... 42
Willis, Ed.....7, 43

Yearlings, How to Train.... 33

Illustrations.

Airdale, 2:15¾, World's Champion Yearling..... 15
Peter Volo, 2:04½, World's Champion Two-year-old Trotter 51
Colorado E., 2:04¾, World's Champion Three-year-old Trotter 66
Native Belle, 2:07¾, World's Champion Two-year-old Filly 106

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